

Distraction effects of in-car music; the proof is in the performance

W. Brodsky

Department of the Arts, Ben-Gurion University of the Negev, Beer-Sheva, Israel

Author email: wbrodsky@bgu.ac.il

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Drivers engage in a host of driving-unrelated tasks while on the road. Most frequently, drivers listen to music and sing-along with the words in a *karaoke* fashion (i.e., Car-aoke) and often sing background harmony. At times drivers accompany songs by pounding-out drum-kicks and fills on the steering wheel, floorboard, gearshift, or their own body. However, there is controversy over the utility of in-cabin music: Does background music facilitate via increased arousal leading to more focused concentration (Unal, Steg, & Epstude, 2012; Unal, de Ward, Epstude, & Steg, 2013; Unal Platteel, Steg, & Epstude, 2013), or cause distraction increasing risk (Brodsky 2002, 2015; Brodsky & Kizner, 2012; Brodsky & Slor, 2013; Hughes, Rudin-Brown & Young, 2013). Moreover, Unal and colleagues claim that drivers easily implement cognitive strategies to reduce task-demands on the road by blocking-out auditory distracters such as music and radio broadcasting. To shed light on the issue, the current on-going study investigates the secondary task (i.e., music engagement) under three simulated driving contexts: baseline stationary parked vehicle, low-demand driving, and high-demand driving. In Study I, 18 undergraduate young drivers recorded vocal performances of two songs at baseline; the vocal performances were analyzed and compared to vocal performances of the same songs recorded during simulated low-demand and high-demand driving tasks. The results indicated that as the perceptual demands of the primary driving task increased, vocal performances were more hampered with inaccuracies of intonation, rhythm, and tempo, as well as with errors of lyrics by word replacement or neglect. In Study II, 25 undergraduate young drivers will be recruited and record music performances of percussive accompaniment to two songs under three simulated driving contexts: baseline stationary parked vehicle, low-demand driving, and high-demand driving. It is expected that similar effects will surface, and further demonstrate increased levels of effect size than seen in Study I. In-car music may not necessarily be handled very well, nor can it be blocked-out by drivers during high-demand driving as previously reported. Singing and drumming with in-cabin music background clearly contributes to increased risk. Drivers should be made aware this driver behavior, and learn to choose in-car music more wisely. In-car music should be re-considered by traffic scientists investigating human factors and driver distraction.

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