

Effects of Viewing Simulated Natural and Urban Environment on Affect and Cognition in a Sample of Young Adults

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Virtual reality, in both 2D and 3D formats, has become increasingly prevalent in psychological research, providing immersive environments to explore human behavior, emotion, and cognition. While studies often highlight the restorative benefits of virtual nature environments over urban ones, the effects on affect and cognitive outcomes are still debated. Additionally, there is limited research on the potential benefits of social sharing in simulated natural environments for affect and cognition. This study aimed to investigate the effects of viewing 2D simulated natural, urban, or neutral (control) environments on affective and cognitive outcomes, and whether these effects vary based on shared or solo experiences. Using a 3x2x2 mixed design, 164 university students were enrolled, with exposure conditions manipulated as shared vs. solo experiences and repeated measures assessing changes from pre-exposure to post-exposure. Results indicated that participants exposed to natural environments had higher levels of restorativeness. Furthermore, in the solo journey condition, participants exposed to natural virtual environments showed higher scores in certain attention outcomes (i.e., Adaptive Tachistoscopic Traffic Perception) compared to those in urban environments. The findings suggest that natural virtual environments could have beneficial effects on attention outcomes, and individuals exposed to urban environments tend to perform worse when they are in solo experience compared to when they are in shared experience. These insights underscore the importance of considering social sharing and environmental factors in virtual reality research for understanding their impacts on human behavior, affect, and cognition.

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