High-arousal positive emotion evoking is more effective in VR than on a 2D monitor based on computational affection

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Abstract

Virtual Reality (VR) technology has been widely used in researching situations that require high ecological validity but are difficult to copy. In this paper, we compare the effect of 360-degree videos in VR head-mounted display and 2D computer screen on evoking four types of emotional states, and innovatively assess the effect of emotion evoking using the Go/No-go attention paradigm. Based on the eye movement data collected from a considerable number of participants (N=48), the result reaches marginally significance in the effect of immersion level of evoking (p=0.075), emotion's level of arousal (p=0.019), and the interaction between them (p=0.037) under the condition of positive evoking. We find that immersive device can better evoke positive emotions with high arousal, while non-immersive device cannot manipulate the intensity of evoked emotions. Our study empirically demonstrate that high-arousal positive emotion evoking is more effective in VR than on a 2D monitor based on computational affection.

In J. Culbertson, A. Perfors, H. Rabagliati & V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society*.