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**THE INFLUENCE OF FEEDBACK ON STEPPING OUT GAP JUDGMENT IN
VIRTUAL REALITY**

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ABSTRACT

Accurate affordance gap judgments are critical in our everyday lives. There is currently no easy way to train affordance gap judgments, particularly for high-risk situations such as outdoor and rescue activities. Virtual reality (VR) environments offer potential for affordance training. However, we do not know if virtual reality training of gaps will affect behavior in the real world. Addressing these matters requires testing affordance training in stepping out gap judgments in both the real world and VR. Here, we examined one affordance judgment in both environments – stepping over a gap. We first measured participants' estimation of their biggest step in the real world. Participants then completed segments of training in VR that included adjustment and feedback phases. In adjustment trials, participants adjusted a virtual template with a footprint to a distance where they perceived their biggest step could be taken. In feedback trials, the template was farther or closer than their baseline step, and participants had to decide if they could take the step. Following this affordance judgment, they then took the step to receive visual feedback on where their foot landed. Our goal was to determine if outcome feedback about stepping out judgments in VR improves real world and VR affordance judgments. Real world performance variability decreased following the training regimen. Post-test normalized standard deviation was 0.12 whereas pre-test standard deviation was 0.14. While preliminary data show a high degree of variability, results indicate that training in VR does have an influence over affordance gap judgments when stepping out.

Keywords: affordance, virtual reality, gap, stepping out, perception, behavioral training