

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Effects of Scaling Shoulder Width on Passability Affordance in Virtual Reality

Permalink

<https://escholarship.org/uc/item/6c62w9z5>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 43(43)

Authors

Andaç, Safa

Sezer, Bora Can

Ayhan, Inci

et al.

Publication Date

2021

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Effects of Scaling Shoulder Width on Passability Affordance in Virtual Reality

Safa Andaç

Boğaziçi University, İstanbul, Turkey

Bora Sezer

Architecture and Design, Istanbul, marmara, Turkey

Inci Ayhan

Bogazici University, Istanbul, Turkey

Emre Ugur

Bogazici University, Istanbul, Turkey

Erhan Oztop

Osaka University , Suita, Osaka, Japan

Abstract

Passability of an aperture, as a perceived affordance, is determined by the fit between the apparent aspects of the environment (e.g. perceived gap) and the perceived body scale. Here, in order to understand the effects of body scaling on the affordance of passability, we conducted a virtual reality study in which in blocked trials, we assigned participants ($N = 20$) different shoulder widths (narrow, normal, and wide). Participants were instructed to walk naturally to pass through an aperture scaled to their virtual shoulder without colliding and to reach a target on a table. The results showed that participants were closer to the target on the table when assigned narrow rather than normal shoulders. Also reflected in their perceptual judgments, those with narrow virtual shoulders thought they had smaller shoulder width, an effect not seen in the wide shoulder condition, which together demonstrate an asymmetry in the effects of body scaling.