# Effects of Scaling Shoulder Width on Passability Affordance in Virtual Reality

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**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.