Distance Perception in Virtual Reality
Comparing Modern Headsets to the Real World

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Egocentric distance in virtual reality (VR) has been underperceived compared to the real world for decades. This study compares egocentric distance perception in two modern VR headsets, the Oculus Quest and Oculus Quest 2, to the real world using blind walking and verbal distance judgments. Participants made egocentric distance judgments to an object 1-5 meters away in either a real environment or matched virtual environment. Verbal and blind walking distance judgments were more accurate in the real world than in the Oculus Quest and Oculus Quest 2. However, there was no significant difference in either verbal distance judgments or blind walking judgments between the Oculus Quest and Oculus Quest 2. This indicates that egocentric distance perception continues to be a problem in modern VR headsets.

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