The effects of perspective on understanding of projective spatial terms

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Abstract: We use projective spatial terms to indicate a location and a direction in communications about both real space and three-dimensional computer graphics (3DCG) space. However, it is often possible to also use an overhead perspective or the perspective of a communication partner, especially in a communication system using 3DCG space, in addition to our own first-person view. This study focused on the effects of these three perspectives on understanding projective spatial terms in a 3DCG system. In this experiment, we used four projective spatial terms (front, back, left, and right) and 3DCG stimuli based on three views (a participant's first-person view, an overhead view, and a communication partner's view). We investigated how the three views influenced understanding of the spatial terms. The results show that an overhead view had little effect on understanding of the spatial terms and that the communication partner's view had considerable effect on such understanding.