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Abstract to poster:

The illusion of absence: Smaller obstructions of view and binocular viewing create stronger impressions of empty spaces.

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The recently described illusion of absence occurs when the space behind an obstruction of view is perceived as empty, despite insufficient information to support such a conclusion. A theoretical framework based on the generic view principle predicts that the illusion should be more pronounced with narrow obstructions. To test this hypothesis, we varied the widths of obstructions and viewing conditions in a repeated-measures design, utilizing perceived levitation (floating in the air) of real physical objects as a proxy for the perception of empty space. If the space containing the obstruction, behind which there is support carrying another partially visible object, is experienced as empty, this object should be experienced as levitating because it is perceived to be surrounded by empty space on all sides. We also tested the hypothesis that the illusion of absence diminishes under monocular viewing conditions due to a reduced sense of depth and space. Our results confirmed both hypotheses. The observed decrease in the illusion of absence with occluder width also aligns with findings from a previously published study. Beyond contributing to the debate on seeing versus knowledge in vision science, the findings of this experiment will inform future VR-based perceptual and driving studies about the potential impact of the illusion in everyday settings. By identifying the conditions that amplify the illusion, it would be possible to better anticipate and mitigate its potentially detrimental effects in real-world scenarios. This study was funded by the Research Council of Norway, project number 334817.