

The illusion of absence: Perceiving occluded space as empty

¹Forster, P. P., ²Czub, M., ¹Hazenberg, S. J., ³Ekroll, V., ¹van Lier, R.

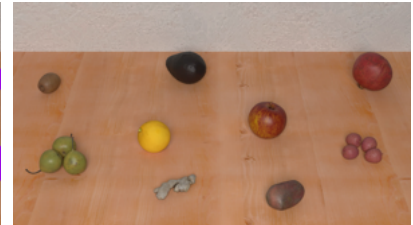
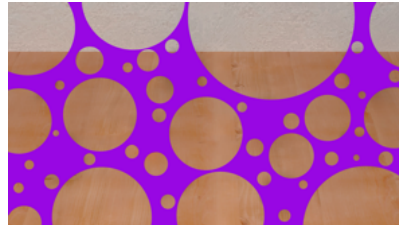
¹Radboud University, Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, The Netherlands

²University of Wrocław, Institute of Psychology, Wrocław, Poland

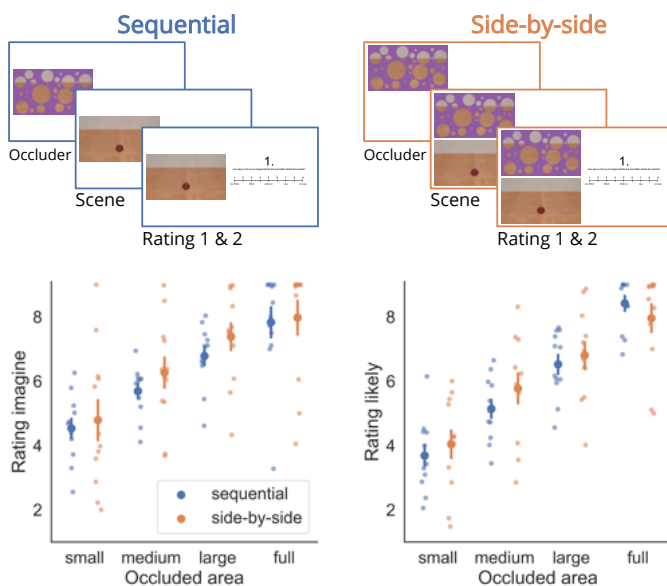
³Department of Psychosocial Science, University of Bergen, Bergen, Norway

Illusion of absence

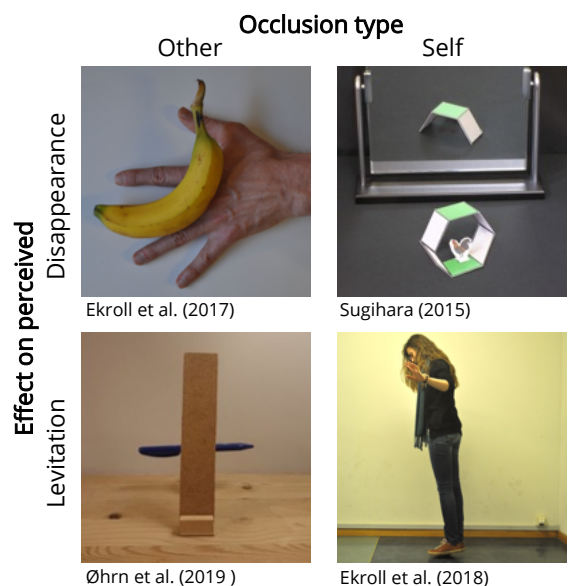
The visual system favours interpretations that are invariant to small changes in viewpoint (generic view principle, Albert, 2001). This might lead to the perception of occluded space as being empty (illusion of absence) in highly coincidental situations (Ekroll et al., 2021).



Perception of occluded space



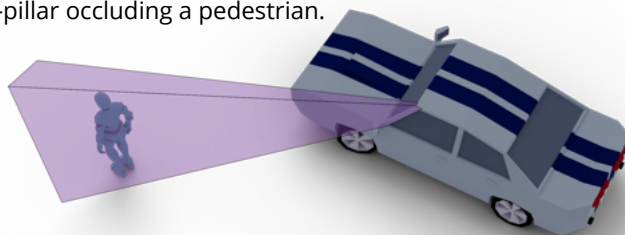
Perceptual effect of occlusion



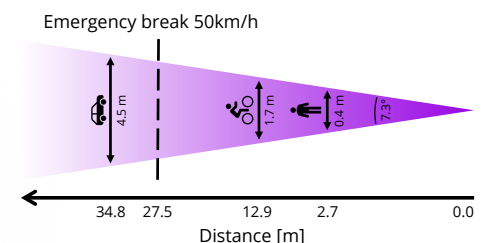
Road accidents

The illusion of absence in road traffic, e.g., induced by the car's A-pillar, can lead to looked-but-failed-to-see (LBFTS) accidents (Cheng et al., 2019, Ekroll et al., 2021).

A-pillar occluding a pedestrian.



A-pillar occlusion depending on distance.



Distances and sizes based on Ekroll et al. (2021).

References

- Albert (2001). Surface perception and the generic view principle. *TICS*
- Cheng et al. (2019). Video-recorded "looked-but-failed-to-see" (LBFTS) accidents in the junctions of Hong Kong. *SAE International*
- Ekroll et al. (2017). The other side of magic: The psychology of perceiving hidden things. *Perspect. Psychol. Sci.*
- Ekroll et al. (2018). Amodal volume completion and the thin building illusion. *i-Percept.*
- Ekroll et al. (2021). The illusion of absence: How a common feature of magic shows can explain a class of road accidents. *CRP*
- Øhrn et al. (2019). A Perceptual illusion of empty space can create a perceptual illusion of levitation. *i-Percept.*
- Sugihara (2015). Fourth generation impossible objects. <http://www.isc.meiji.ac.jp/~kokichis/Welcme.html>



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Contact: pierre-pascal.forster@donders.ru.nl

Radboud University Radboudumc

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