

The Link between Affective Closeness and Space Perception

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Abstract

Do social relationships influence visual perception of aperture width? Participants estimated the width of the apertures between pictures of a wall and of a human figure evoking a **loved person** or a **disliked person**. They also indicated if the apertures was wide enough to allow them to pass. There is a significant interaction between the actual aperture width and the social relationship. Participants in the **disliked person group** tended to underestimate the aperture width compared with those in the **loved person group** but only for the apertures they estimated wide enough to pass. There is also a significant positive correlation between affective closeness and the passability judgements but only for the **disliked person group**. These results might be explained by both an anticipation of the personal space invasion and demand characteristics.

1. Introduction

Background. The closer we feel toward two acquaintances, the more passable the apertures between them appear and the less we need space to pass¹ ← anticipation of personal space invasion²?

Objectives. To test if social relationships (i.e., **loved person group** vs. **disliked person group**) influence visual perception of aperture widths using a visual matching task.

2. Method

1. Mental imagery (instructions provided by earphones)

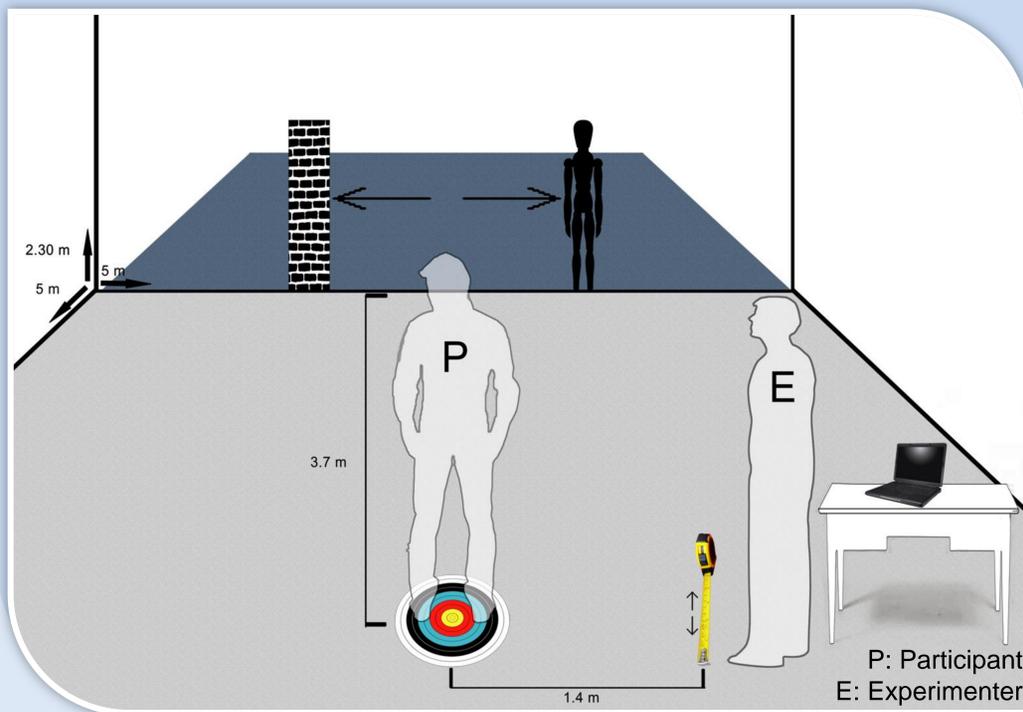
- To relax (1 min)
- To choose a **loved** ($n = 27$) or a **disliked** ($n = 29$) person and to visualize this person (3 min)

2. Visual-matching task

- To imagine the human figure (see the experimental setting below) is the previously chosen person
- To imagine trying to pass between the wall and the person
- To stop the experimenter (E) while he unroll a tape measure when estimating the length of the tape is equal to the aperture width
- To indicated if the aperture is wide enough to pass (i.e., passability judgments)

3. Post-experimental questionnaire.

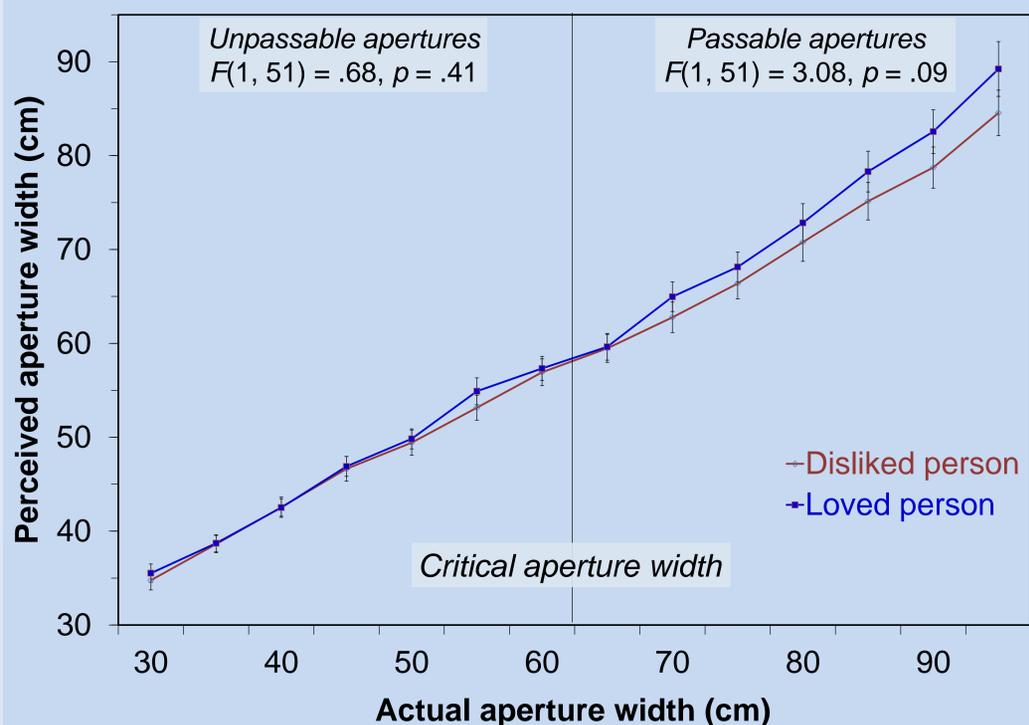
- To answer questions about suspicion regarding the hypothesis
- To rate on a scale the affective closeness toward the choosed person



3. Results

Effect of social relationship on perceived aperture width

- Significant interaction effect between social relationship and actual aperture width, $F(13, 663) = 2, p = .02$
- Marginal effect of social relationship for apertures judged wide enough to pass (> 61 cm, see below passable aperture), but not for apertures judged too narrow to pass (< 61 cm, see below unpassable apertures)



Link between affective closeness and passability judgments

Significant positive correlation between affective closeness and percentage of « yes » passability judgments for participants in the **disliked person group**, $r = .64, p = .01$, but not for participants in the **loved person group**, $r = -.42, p = .23$

Suspicion check

Suspicion in the **loved person group** $<$ suspicion in the **disliked person group**, $t(54) = 21.32, p < .001$

3. Discussion & Conclusion

- **Economy of action account³:** The anticipation of personal space invasion might produce a trend to perceived shorter aperture widths in presence of **disliked persons** than in presence of **loved ones**. The correlation between affective closeness and passability judgments observed only with **disliked persons** might suggest that affective closeness is more relevant for passability with such persons than with **loved ones**.
- **Demand characteristics account⁴:** Suspicion about the hypothesis could have lead participants in the **disliked person group** to decrease their aperture width estimations and to make passability judgments consistent with their expectations.

The effects presented above remain when statistically controlling for suspicion. However a better design with indirect measures and implicit experimental manipulations will be required for future studies to be more conclusive.

References

- ¹Morgado, N., Muller, D., Gentaz, E., & Palluel-Germain, R. (2011). Close to me? The influence of affective closeness on space perception. *Perception*, 40(7), 877-879.
- ²Hayduk, L. A. (1983). Personal space: Where we now stand. *Psychological Bulletin*, 94(2), 293-335.
- ³Proffitt, D. R. (2006). Embodied perception and the economy of action. *Perspectives on Psychological Science*, 1(2), 110-122.
- ⁴Durgin, F. H., Baird, J. A., Greenburg, M., Russell, R., Shaughnessy, K., & Waymouth, S. (2009). Who is being deceived? The experimental demands of wearing a backpack. *Psychonomic Bulletin & Review*, 16(5), 964-969.