D08 Shaking hands in the face of danger? Interpersonal distance, peripersonal space, pro- and anti-social consequences of face masks during the COVID-19 pandemic

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Introduction

- Peripersonal space (PPS): space surrounding our body, where multisensory integration of stimuli and action execution take place (Rizzolatti et al., 1981)
- Size is flexible (about 50 – 90 cm)
- Comfortable interpersonal distance (IPD) is a compromise of approach and avoidance forces(Argyle & Dean, 1965).
- PPS and IPD share common mechanisms of self-protection.
- COVID-19 pandemic has impacted distancing behaviors.
- Face mask may serve as a contamination or a pro-social signal.
- Evidence mixed: wearing a mask **reduces** PPS (Serino et al., 2021) and IPD (Calbi et al., 2021; Cartaud et al., 2020) **or enlarges** PPS (Sakuma & Ikeda, 2021) and IPD (Seres et al., 2020, Welsch et al., 2021).
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Materials and methods

- Online Experiment (on Gorilla)
- Stimuli: pictures of two individuals in following conditions (s. Figure 1 for sample stimuli):

☑ Distance: 50 cm, 90 cm, 120 cm
☑ Mask: mask, no mask
☑ Interaction: shaking hands, no interaction

- Task: Press Q (or P, counterbalanced) if at least one of the individuals in the picture is a man (or a woman, counterbalanced) -> **RT measured**
- **235 participants** (18 males, mean age 24 y. o.)

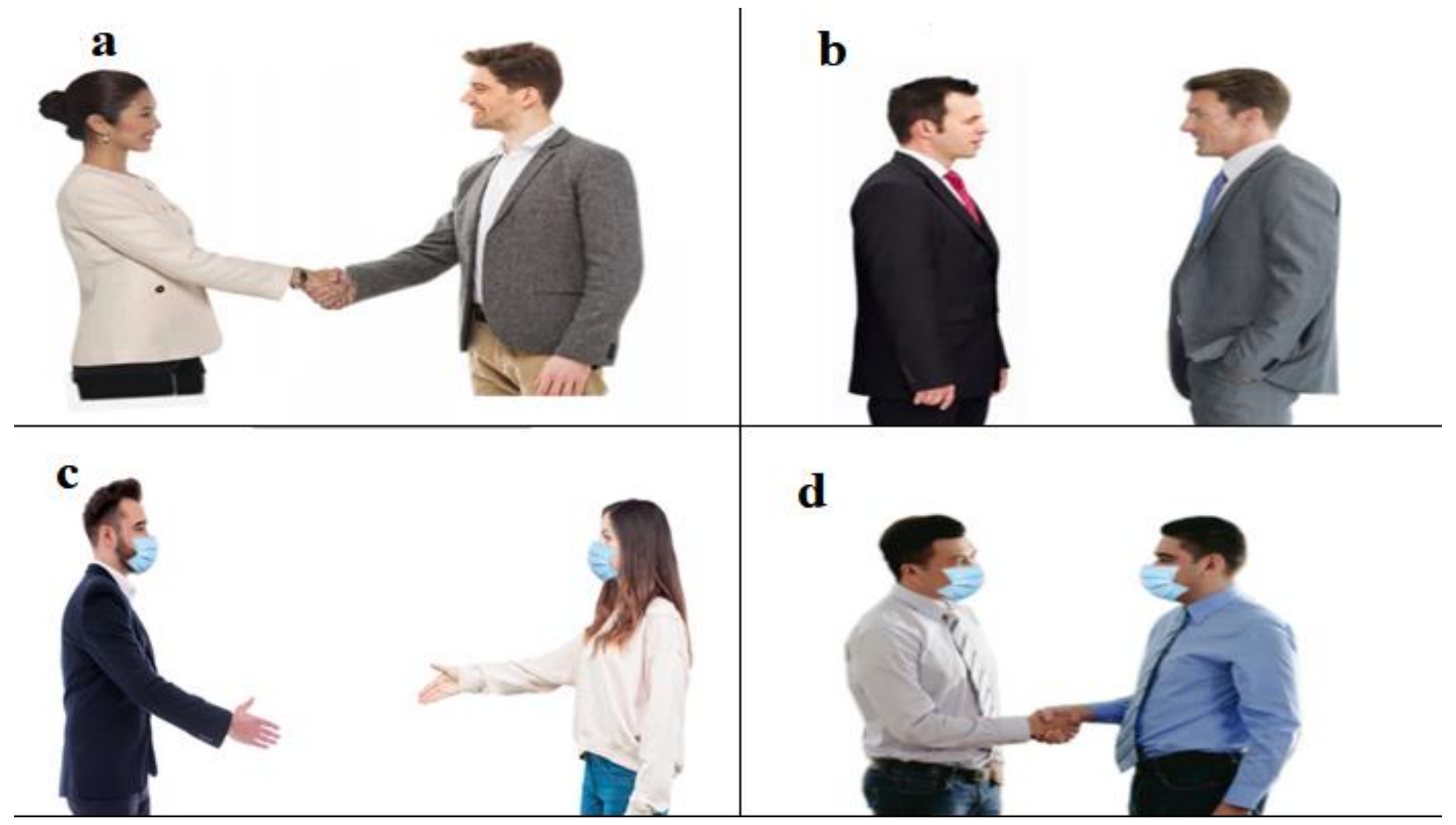

Figure 1. Sample stimuli. Panel a: female-male, 90 cm, interaction, no mask. Panel b: male-male, 50 cm, no interaction, no mask; Panel c: male-female, 150 cm, interaction, mask. Panel d: male-male, 50 cm, interaction, mask.

Results

Main effects:

face mask, $F(1, 215) = 39.15$, $\eta2 = .15$, $p < .001$ -> processing advantage for pictures with a face mask (mean RT = 628.35, SD = 70.50); **distance** $F(2, 422) = 49.11$, $\eta2 = .19$, $p < .001$

- fastest RTs for 90 cm (mean RT = 624.75, SD = 70.09)
- 50 cm (mean RT = 632.68, SD = 69.80)
- 150 cm (mean RT = 638.60, SD = 69.86)

interaction style, $F(1, 215) = 4.53$, $\eta2 = .02$, $p = .03$ -> faster RT for stimuli without interaction (mean RT = 630.78,

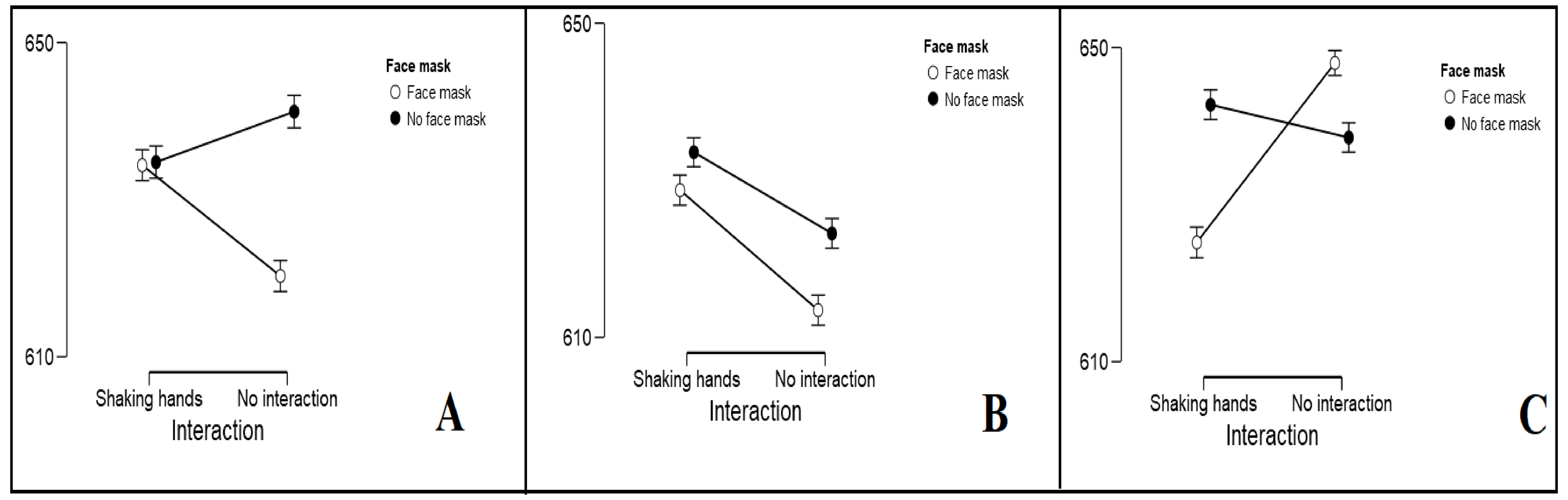

Figure 2. Reaction times [ms] as a function of face mask and interaction style in all three distances (50 cm/near, 90 cm/middle, 150 cm/far). Panel A: 150 cm. Panel B: 90 cm. Panel C: 50 cm. Error bars denote one standard deviation of the mean.

Interaction effects:

face mask* distance, $F(2, 429) = 3.19$, $\eta2 = .02$, $p = .04$,
distance * interaction, $F(2, 424) = 36.10$, $\eta2 = .14$, $p < .001$
face mask * distance * interaction, $F(2, 425) = 41.46$, $\eta2 = .16$, $p < .001$.
-> fastest RT with a face mask and no interaction at 90 cm; slowest RT with face mask, with no interaction and at a distance of 150 cm (see Figure 2),

Discussion

☑ Face masks as a symbol of protection facilitate social behavior.
☑ Avoidance behavior when interaction.
☑ Individuals are perceived more positively when the IPD is 90 cm.
☑ Further factors: general perception of COVID-19 as danger, especially for the elderly, having been infected.

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