Supplementary Materials

for

Infrequent faces bias social attention differentially in manual and oculomotor measures

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Experiment 1

Results

Manual Response Time (RT). As per our a priori analysis plan, mean correct RTs were examined using an omnibus repeated measures ANOVA with *Cue frequency* (frequent, infrequent), *Cue orientation* (upright, inverted), *Face position* (left visual field, right visual field), *Target location* (eyes, mouth, top house, bottom house), and *Cue-target interval* (250, 360, 560, 1000ms). All correction procedures for multiple comparisons overlap with specifications described in Experiment 1.

For Experiment 1, social attention biasing was not reliable for either frequently or infrequently presented face-house cue pairs. The only significant effect involving the key factor of Cue frequency was a three-way interaction between *Cue frequency*, *Face position*, and *Cue-target interval* [$F(3,87)=3.21$, $p=.027$, $\eta_p^2=.10$]. To follow-up on this analysis, repeated measures ANOVAs were carried out for Infrequent and Frequent cues separately, each run as a function of *Face position* and *Cue-target interval*.

For Infrequent cues, there was a significant main effect of *Cue-target interval* [$F(3,87)=92.25$, $p<.001$, $\eta_p^2=.76$], with overall slower RTs found for shorter versus longer cue-target intervals [250ms vs. all, *t*s>10.83, *p*s<.001, d_zs>1.98; all other *p*s>.58, d_zs<.24]. This result reflects the foreperiod effect, a consistent finding across previous studies utilizing the dot-probe task (Pereira et al., 2019a, 2019b, 2019c), showing increased response preparation with a lengthening of the time between the cue and the target (Bertelson, 1967; Hayward & Ristic, 2013). There was also an interaction between *Face Position* and *Cue-target interval* [$F(3,87)=3.69$, $p=.015$, $\eta_p^2=.11$], which demonstrated a greater foreperiod effect when faces were presented in the left visual field [250ms vs. all, *t*s>12.07, *p*s<.001, d_zs>2.20; all other *p*s>.09,

d_zs<.41] compared to the right visual field [250ms vs. all, *t*s>7.10, *p*s<.001, d_zs>1.30; all other *p*s>.64, d_zs<.23]. No other effects were reliable [all other *F*=.48, *p*=.50, η_p^2=.02]. For Frequent cues, there was only a significant main effect of *Cue-target interval* [*F*(3,87)=41.97, *p*<.001, η_p^2=.59], with slower overall RTs for shorter versus longer cue-target intervals [250ms vs. all, *t*s>7.33, *p*s<.001, d_zs>1.34; all other *p*s>.57, d_zs<.24]. No other effects were significant [all other *F*s<2.59, *p*s>.06, η_p^2s<.08].

Reflecting the three-way interaction, the omnibus ANOVA also indicated a main effect of *Cue-target interval* [Mauchly's test of sphericity, χ^2(5)=21.50, *p*=.001; *F*(2.21,63.97)=94.72, *p*<.001, η_p^2=.77; 250ms vs. all, *t*s>10.42, *p*s<.001, d_zs>1.90; all other *p*s>.72, d_zs<.22], and a *Face position* and *Cue-target interval* interaction [Mauchly's test of sphericity, χ^2(5)=13.03, *p*=.023; *F*(2.46,71.23)=2.95, *p*=.049, η_p^2=.09; faces in the left visual field, 250ms vs. all, *t*s>11.13, *p*s<.001, d_zs>2.03; all other *p*s>.91, d_zs<.19; faces in the right visual field, 250ms vs. all, *t*s>8.20, *p*s<.001, d_zs>1.50; all other *p*s>.99, d_zs<.18]. No other main effects or interactions were reliable [all other *F*s<2.53, *p*s>.06, η_p^2<.08].

Thus, the results from manual data only indicated a larger foreperiod effect for infrequently relative to frequently presented cues. There were no significant effects or interactions found for *Target location* [all *F*s<2.53, *p*s>.06, η_p^2<.08], and Bayesian analyses supported null effects for Upright Face versus House contrasts, returning a BF10 value of .05 for Infrequent cues and .13 for Frequent cues.

Experiment 2

Results

Manual RT. As in Experiment 1, mean correct RTs were examined using an omnibus repeated measures ANOVA with *Cue frequency* (frequent, infrequent), *Cue orientation* (upright, inverted), *Face position* (left visual field, right visual field), *Target location* (eyes, mouth, top house, bottom house), and *Cue-target interval* (250, 360, 560, 1000ms), and the same correction procedures for multiple comparisons.

Once again, we found no attentional biasing towards either frequent or infrequent cues. The highest level interaction involving Cue frequency that reached significance was a three way interaction between *Cue frequency*, *Target location*, and *Cue-target interval* [$F(9,261)=2.27$, $p=.019$, $\eta_p^2=.07$]. To follow this up, two separate repeated measures ANOVAs for each Cue frequency level, i.e., Infrequent and Frequent cues, were run as a function of *Target location* and *Cue-target interval*.

For Infrequent cues, there was a significant main effect of *Cue-target interval* [$F(3,87)=40.58$, $p<.001$, $\eta_p^2=.58$] reflecting an overall foreperiod effect [250ms vs. all, ts>8.34, ps<.001, d_zs>1.52; all other ps>.99, d_zs<.11], and an interaction between *Target location* and *Cue-target interval* [Mauchly's test of sphericity, $\chi^2(44)=63.92$, $p=.029$; $F(6.31,182.94)=2.17$, $p=.045$, $\eta_p^2=.07$]. This interaction indicated that at the shortest cue-target interval of 250ms, targets occurring at the previous location of the Eyes and Mouth were responded to faster than targets occurring at the previous location of the Bottom House [ts>2.87, ps<.038, d_zs>.52]; however, no differences were found between targets occurring at the previous location of the Eyes and Mouth versus the Top House [ts<2.36, ps>.10, d_zs<.43; all other ps>.99, d_zs<.13]. Further, no differences were found at any other cue-target interval [all ps>.20, d_zs<.41] and no other effects were found [all other $F=2.08$, $p=.11$, $\eta_p^2=.07$]. For Frequent cues, only a main effect of *Cue-target interval* was reliable [$F(3,87)=36.66$, $p<.001$, $\eta_p^2=.56$; 250ms vs. all, ts>8.29, ps<.001, d_zs>1.51; all other ps>.99, d_zs<.14].

Additionally, the omnibus ANOVA also indicated a significant main effect for *Face position* [$F(1,29)=4.25$, $p=.048$, $\eta_p^2=.13$], with faster overall RTs when faces were presented in the left versus right visual field, and for *Cue-target interval* [$F(3,87)=56.63$, $p<.001$, $\eta_p^2=.66$; 250ms vs. all, ts>10.44, ps<.001, d_zs>1.91; all other ps>.99, d_zs<.15]. No other effects were found [Fs<1.56, ps>.13, $\eta_p^2<.05$].

Thus, the results from manual data indicated a short-lived attentional bias to respond to targets appearing at the previous location of the Eyes and the Mouth of infrequent faces at the shortest cue-target time of 250ms only; however, this effect was not specific to upright faces overall. Additionally, no reliable attentional biasing effects were found for frequently presented face-house pairs. Bayesian analyses supported null effects for Upright Face versus House contrasts, with a value of .08 for Infrequent cues and .16 for Frequent cues.

Eye Movements. Since the simplified analyses indicated effects of ROI and Cue frequency in oculomotor data, the full ANOVA analyses are presented in the main text.