Results’ note

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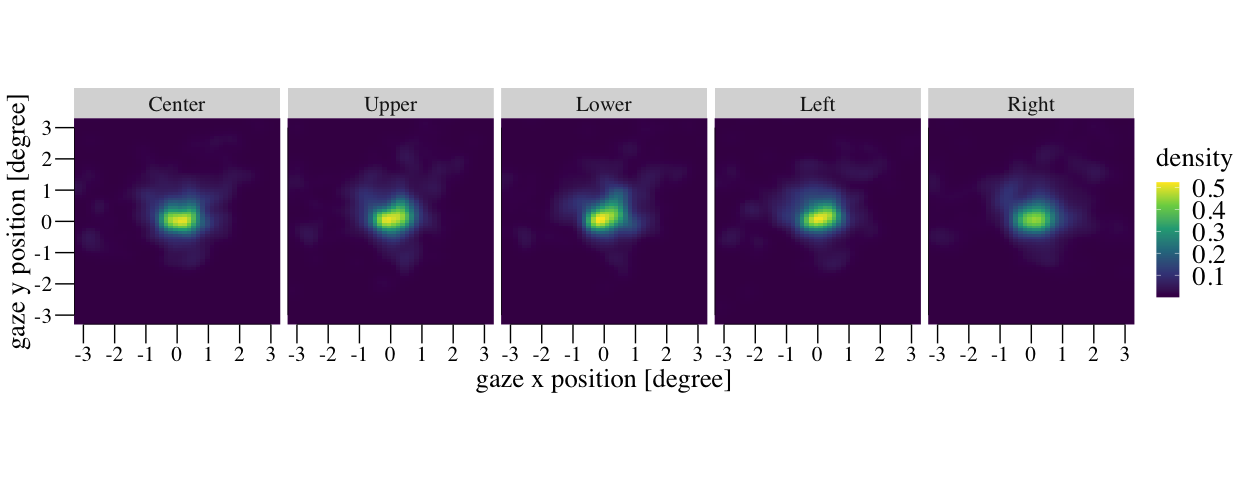
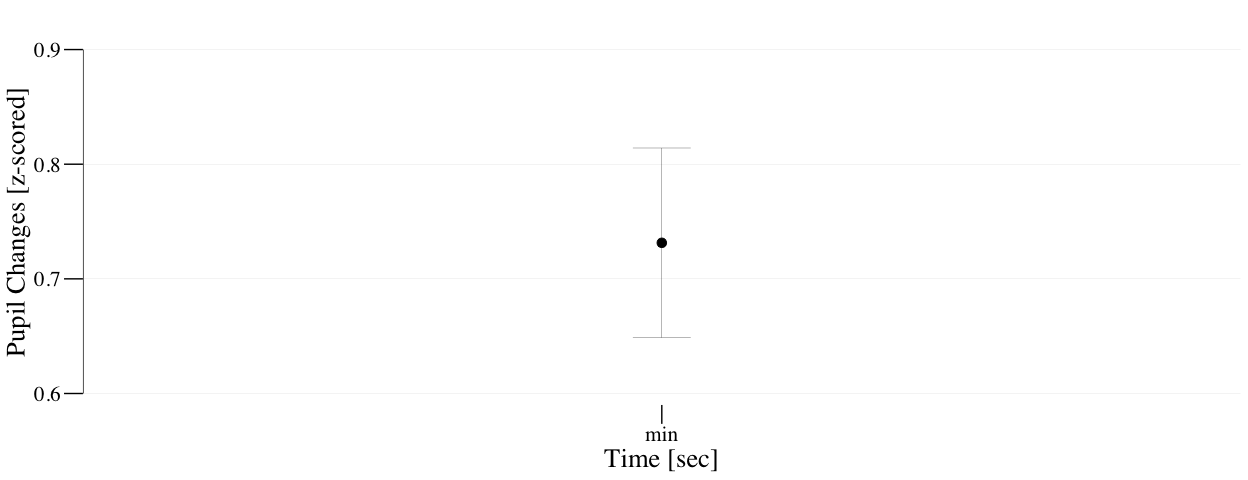
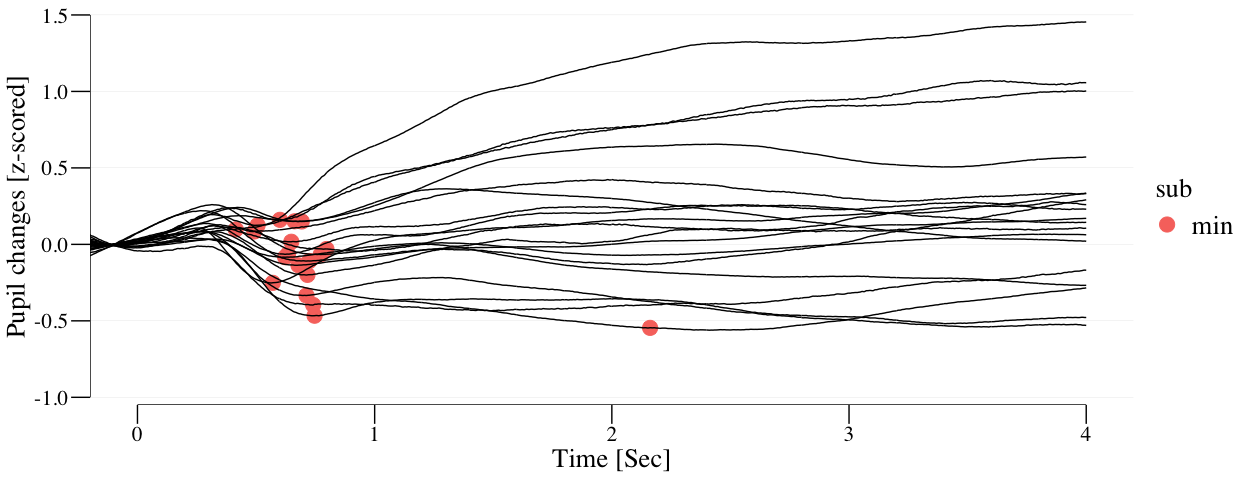
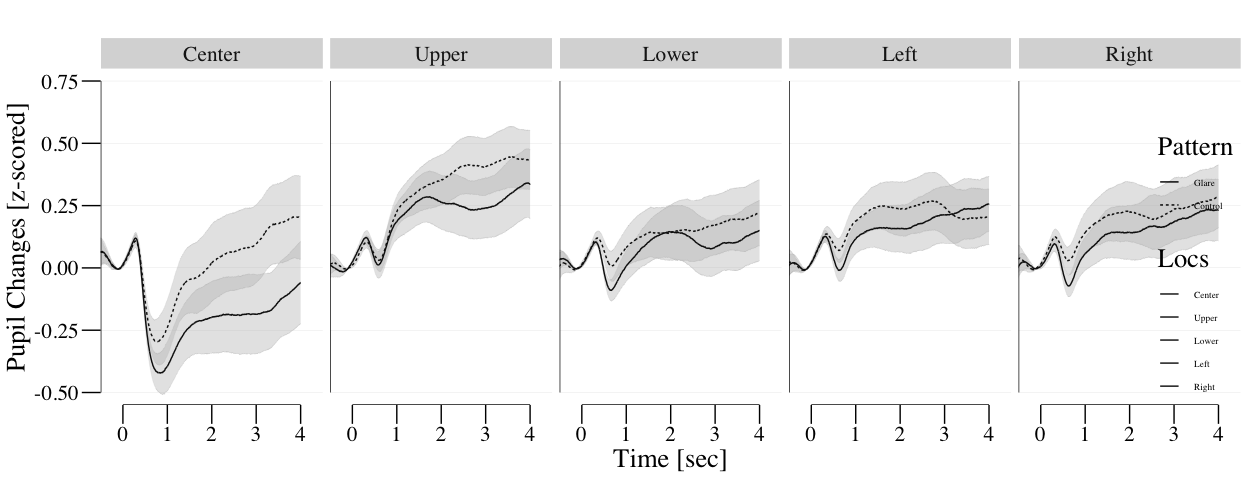
## Article information

Pupil response asymmetries of the periphery visual field in the glare illusion

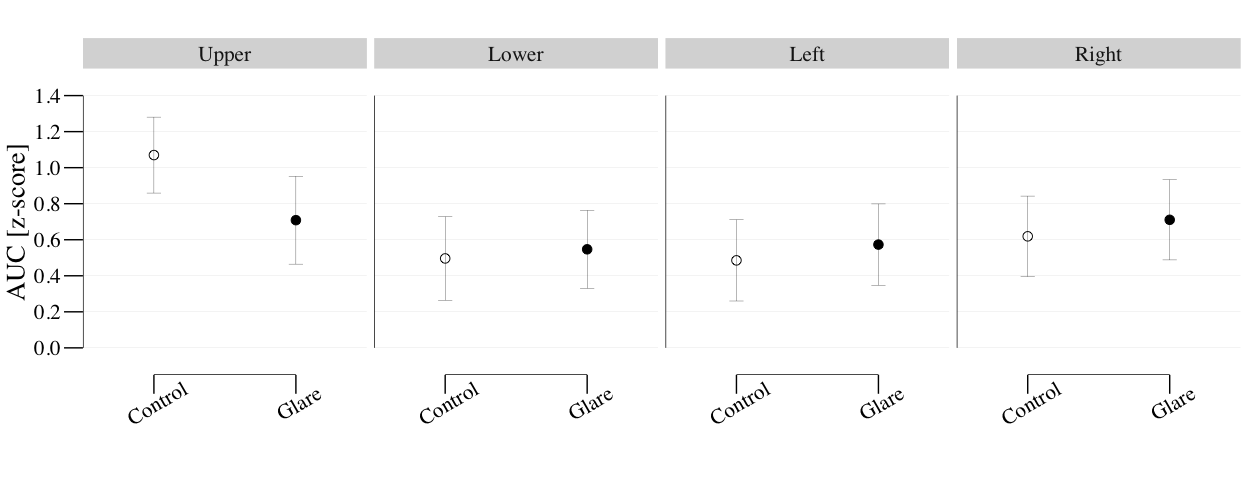
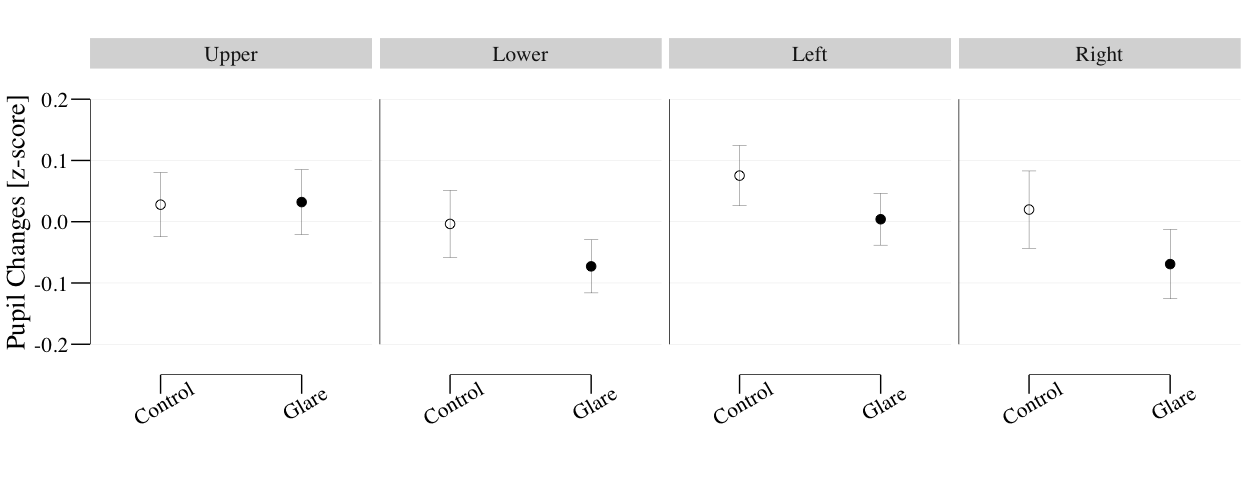
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## Figure 2



## Figure 3



## Results

We observed pupillary responses during the glare illusion or halo stimuli presented at one out of five VF locations (i.e., upper, lower, left, right, and center) as shown in Fig.2A. As reported previously [22,46–48], we confirmed that averaged pupillary response was significantly constricted by the glare illusion in the center condition ((18) = -3.07, = 0.007, Cohen’s = 0.388, = 7.36)

We first determined the MPCL (mean = 0.731s, S.D. = 0.361s) to calculate the early and late components of pupillary response (see Method and Supplementary Fig. 1). In the early component for the periphery condition **(Fig. 3B)**, the two-way repeated measures ANOVA revealed a significant main effect on the pattern and VF locations ((1, 18) = 8.134, p = 0.011, = 0.311; = 6.221, (2.89, 52.023) = 4.356, p = 0.009, = 0.195, = 2.826). However, the post-hoc multiple comparisons for the VF locations showed that any pair of VF location did not reach the significance level (p > 0.05). In addition, there was no significant interaction between the pattern and VF locations ((2.663, 47.936) = 1.066, p = 0.367, = 0.056, = 0.23). For the center condition, there is significant differences of averaged pupil response between glare and halo stimulus ((18) = -2.425, = 0.026, Cohen’s = 0.379, = 2.372) In the late component (the AUC) for the periphery condition, the two-way repeated measures ANOVA revealed a significant main effect on the VF location and interaction ((2.128, 38.303) = 6.436, p = 0.003, = 0.263, = 69.935; (2.983, 53.691) = 2.883, p = 0.044, = 0.138, = 1.329). The post-hoc multiple comparisons for the VFs showed that the UVF produces larger pupil dilation than the left and lower VFs ((18) = 4.091, = 0.004 for upper vs. left; (18) = 2.806, = 0.035 for upper vs. lower; (18) = 1.825, = 0.254 for upper vs. right ) in line with the previous studies **[13,15,17,18]**. Importantly, the post-hoc multiple comparisons for the interaction showed that the significant differences in pupil response between the glare and halo stimuli in the UVF ((18) = 6.847, = 0.017, = 0.276, = 3.283) but not other VFs ((18) = 0.13, = 0.723, = 0.007 = 0.252 for Lower; (18) = 0.466, = 0.503, = 0.025 = 0.292 for Left; (18) = 0.798, = 0.384, = 0.042 = 0.338 for Right). The post-hoc multiple comparisons for the VF location for the halo stimulus showed that the UVF in the halo stimulus produces larger pupil dilation than the left, right and lower VFs ((18) = 4.07, = 0.004 for upper vs. left; (18) = 3.697, = 0.005 for upper vs. right; (18) = 3.388, = 0.01 for upper vs. lower;)

For the Center condition, the AUC was significantly reduced by the glare illusion ((18) = -2.344, = 0.031, Cohen’s = 0.335, = 2.076)

## Figure 3