

## SUPPLEMENTARY Note

***d'* statistics.** For each patient, *d'* scores in each condition were calculated and then converted to standardized z-scores based on age norms. Mean *d'* z-scores for each condition are shown in **Supplementary Fig. 1**. To determine whether either patient group showed a deficit on any condition (performed worse than an expected mean z-score of zero), one sample t-tests were conducted. A Bonferroni correction was applied for the number of comparisons (adjusted alpha = 0.008). For the featural and contour sets, both patient groups performed normally whether the faces were upright or inverted. For the spacing set, patients in the RE (left hemisphere deprivation) group also performed normally on both orientations. In contrast, patients in the LE (right hemisphere deprivation) group were severely impaired on distinguishing faces from the upright spacing set ( $t_9 = -7.03$ ,  $P < 0.001$ ). The LE group also showed a small but significant impairment of about 0.5 standard deviations on the inverted spacing set ( $t_9 = -3.36$ ,  $P = 0.008$ ).

The contribution of early visual input to the right versus left hemisphere towards the development of face-processing strategies was measured by an ANOVA with group, stimulus set and orientation as factors. The results showed that the two deprived groups differed only on the spacing set. The ANOVA showed a significant interaction between stimulus set and group ( $F_{2,36} = 6.12$ ,  $P < 0.01$ ) that did not interact with orientation. Analysis of simple effects showed that the deprived groups did not differ on the featural and contour sets (both  $P$ s  $> 0.1$ ). They differed significantly on the spacing set only ( $F_{1,18} = 10.65$ ,  $P < 0.01$ ; all other  $P$ s  $> 0.1$ ) with the LE (right hemisphere deprived) performing worse than the RE (left hemisphere deprived) group.

Previously we documented a deficit in sensitivity to second-order relations for faces in patients treated for bilateral congenital cataract<sup>1</sup>. To compare the effect of early visual deprivation to the right hemisphere versus both hemispheres, a planned comparison between the LE group, and 10 comparably aged patients treated for bilateral cataract (BE - both eyes group) was conducted on z-scores from the spacing set for both orientations. The LE and BE groups were equally impaired on the spacing set, and both showed larger deficits on the upright orientation. This was shown by a significant effect of orientation on the spacing set ( $F_{1,18} = 22.99$ ,  $P < 0.001$ ) but no significant effect of group or interaction between group and orientation (both  $P$ s  $> 0.1$ ).

1. Le Grand, R., Mondloch, C.J., Maurer, D. & Brent, H.P. Early visual experience and face processing. *Nature* **410**, 890 (2001). Correction: *Nature* **412**, 786 (2001).