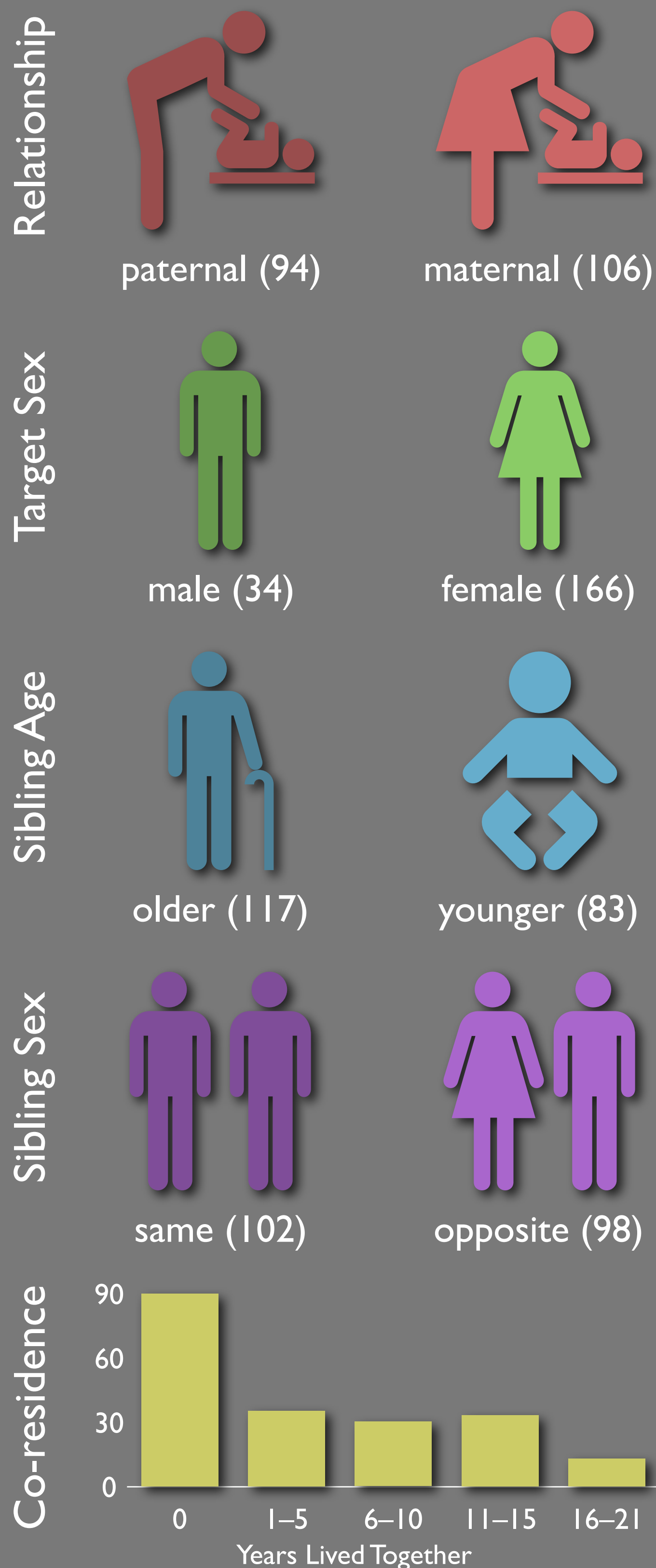


Predictors of Altruism in Maternal versus Paternal Half-Siblings

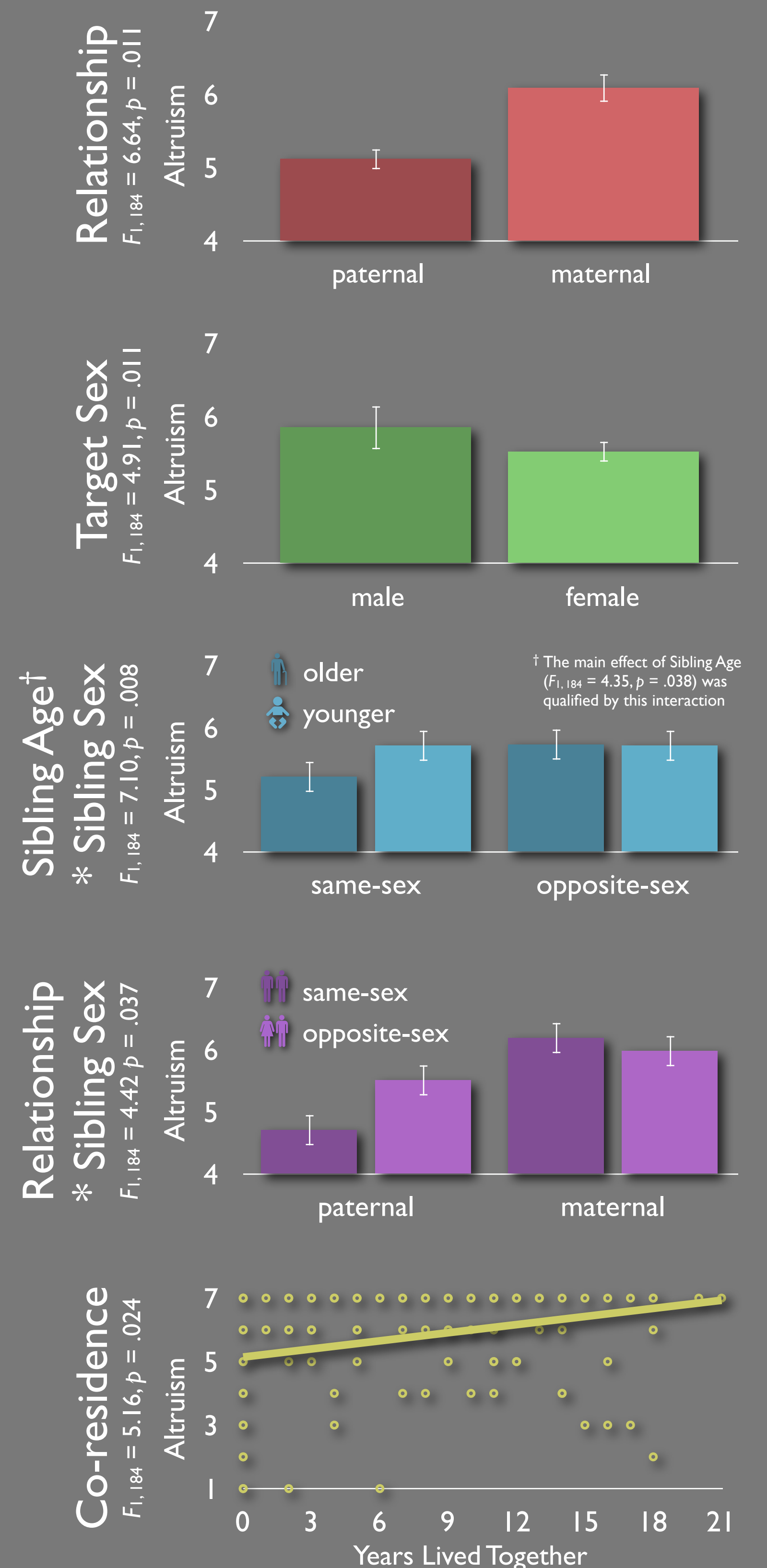
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Inclusive fitness theory^① predicts that behaviours that bias altruism towards genetic relatives will be favoured. One potential cue for kin detection is Maternal-Perinatal Association (MPA)^{②③}, which refers to observing the relationship between one's mother and a child. MPA is associated with stronger altruistic behaviours and attitudes towards younger siblings, regardless of co-residence duration^②. By contrast, altruism towards older siblings, who do not exhibit the cue of MPA, is positively correlated with co-residence duration^②. However, maternal association is confounded with perinatal experience for full siblings. Here we explore the factors associated with altruistic attitudes towards half-siblings in order to separately analyse the effects of relationship (i.e., maternal versus paternal) and sibling age (i.e., older versus younger).



Participants answered an online questionnaire for each of their siblings, in which they indicated the sibling's genetic relationship, age, sex, duration of co-residence and how likely they would be to donate a kidney to this sibling (on a 1–7 scale)^②. For the 200 participants with at least one half-sibling, a half-sibling was randomly chosen for analysis.

Data were analysed using ANCOVA with relationship, target sex, sibling age and sibling sex as between-subjects factors and co-residence duration as a covariate. All significant effects are shown to the right.



Here, we find that the effect of relationship is independent of the effect of sibling age. Participants had more altruistic attitudes towards maternal than paternal half-siblings and this effect did not interact with sibling age. Relationship did interact with sibling sex, such that the effect was larger for same-sex than opposite-sex siblings. Participants had more altruistic attitudes towards younger than older siblings, although this effect interacted with sibling sex and was only found for same-sex siblings. Co-residence duration was positively associated with altruistic attitudes, but did not qualify the effects of relationship or sibling age. These results suggest that MPA may encompass two separate cues of kinship—maternal association and perinatal experience—and that these two cues have separate effects on altruistic attitudes and behaviour.

References: ① Hamilton (1964) *J Theor Biol*, 7, 1–16. ② Lieberman, Tooby & Cosmides (2007) *Nature*, 445, 727–731. ③ Lieberman (2009) *Evol Hum Behav*, 30, 153–160.

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