**Supplementary material**

Diagram

Description automatically generated

Figure S1: Participant flow-chart of the different analysis steps and sample sizes used within the result section.

We expected to find higher NAcc activation for each parent if questionnaire results point to a stronger emotional relationship within the family (assessed using the FACES IV questionnaire, (Olson, 2011)) (hypothesis #18) . The data did not support this hypothesis. Correlation between Family Cohesion and NAcc ROI activation for mother (*r* = 0.07, *p* = .43) and father (*r* = 0.03, *p* = .70) were non-significant.

We also expected to find a positive correlation between NAcc activity for the other-gain > self-no-gain contrast (for stranger) for participants with higher prosociality scores as measured by the Prosocial Tendencies Measurement Revised scale (Carlo, Hausmann, Christiansen, & Randall, 2003) (Hypothesis #19). This hypothesis was not confirmed (*r* = -0.03, *p* = .70). We, additionally expected to find a positive correlation between NAcc activation for the stranger in the OtherWin> self-no-gain contrast and self-reported perspective-taking skills and empathic concern (hypothesis #20). Results revealed no significant association between NAcc and perspective taking (*r* = 0.07, *p* = .40) or empathic concern (*r* = - 0.06, *p* = .48).

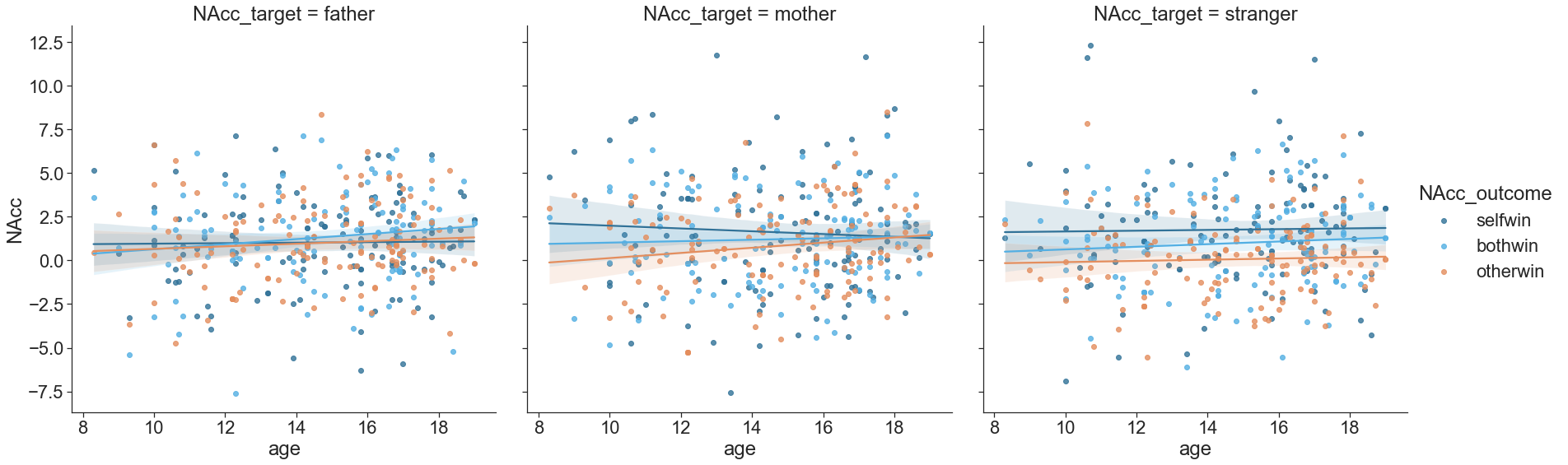
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Figure S: NAcc ROI activation as a function of age based on the target (column) and the condition (color).

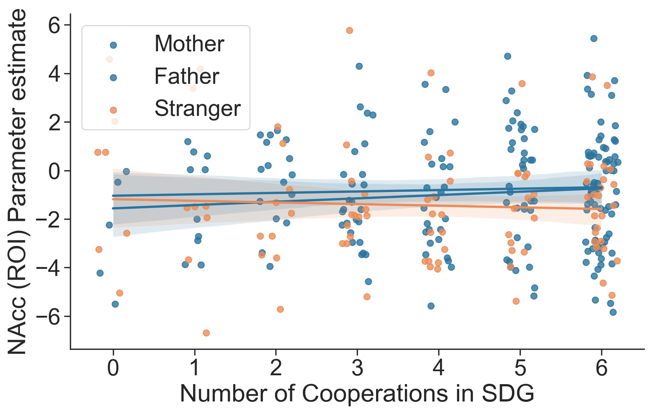
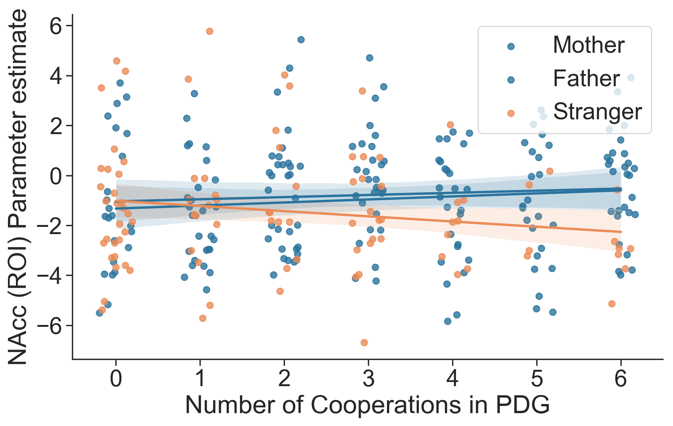


Figure S: Scatterplot of NAcc ROI activation (for Vicarious reward condition OtherWin) and number of cooperations for the PDG and the SDG for all targets (colors).

Graphical user interface, application

Description automatically generated

Figure S4: vmPFC ROI creation using SPM8 and the Marsbar toolbox. Center of the sphere was at voxel x = 2, y = 44, z = -4. A 10 mm radius was drawn around it.

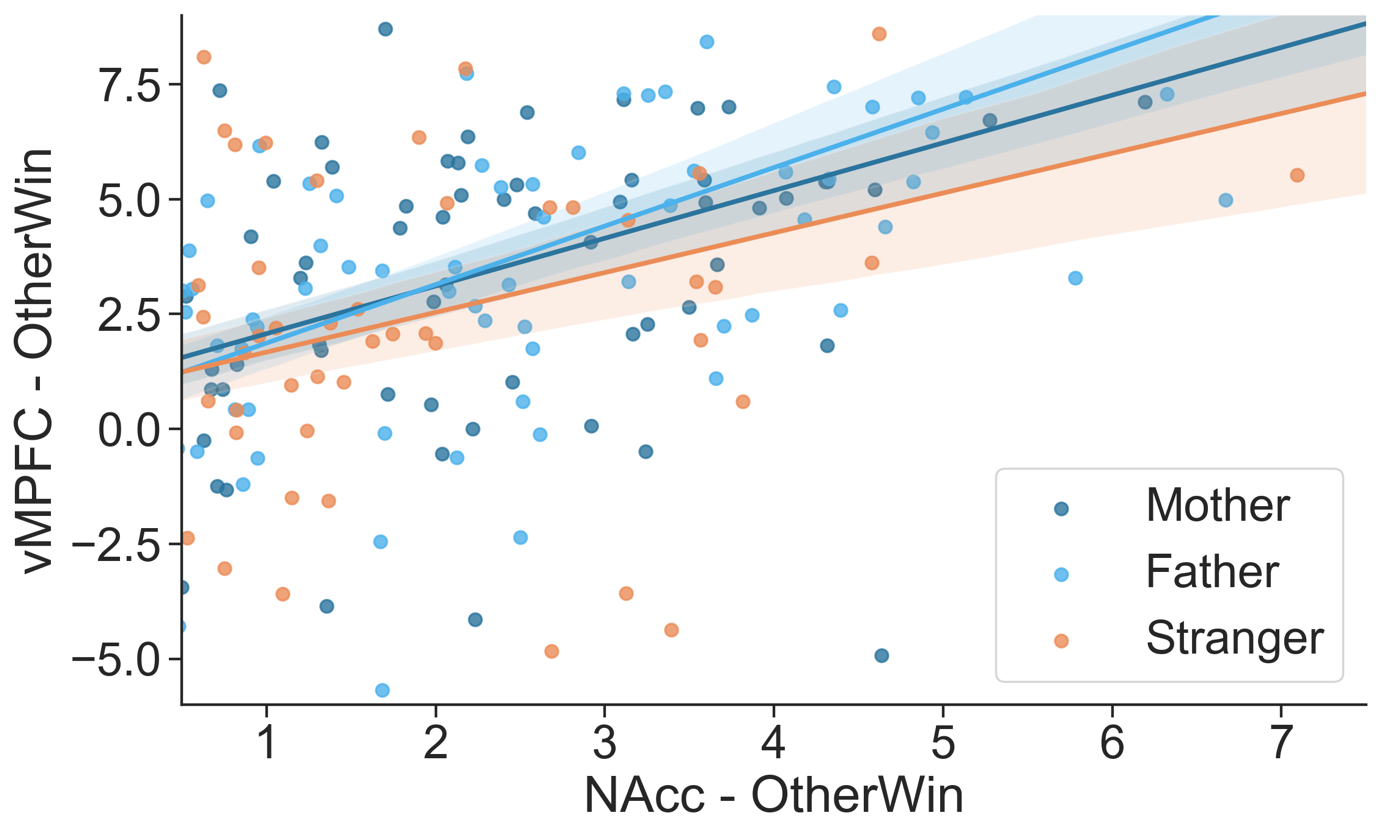


Figure S5: Correlation between vmPFC and NAcc for the vicarious reward condition (OtherWin) for all three targets . Significant and large correlation effects for all three targets (r range from 0.5 to 0.65).