**Supplementary Materials**

**Genetic and Environmental Associations Between Child Personality and Parenting**

In this online supplement, we report sensitivity analyses of our primary results (Tables S1-S4). We tested whether the genetic covariance between child personality and parenting differed depending on whether this covariance was specified to be equal across additive and non-additive components, due to additive variance only, or due to non-additive variance only. Table S1 presents parameter estimates across each of these specifications for parental warmth, and Table S2 presents similar results for parental stress. Table S3 presents model fit statistics for the parental warmth models, and Table S4 presents similar model fit statistics for parental stress. Generally, model fit statistics were equivalent across each specification, with slightly worse fit in some cases when only one cross-pathway was estimated. In contrast, parameter estimates did differ substantially across specifications. Results were almost identical across specifications where the A and D cross-pathways were constrained to be equal and when only the D cross-pathway was estimated. When only the A cross-pathway was estimated, parameter estimates were substantially larger. We view these parameter estimates as untrustworthy because these models also tended to estimate zero residual child genetic variance in parenting, a result that would not be expected even if the entirety of the observed phenotypic correlation was due to genetic factors. This parameter indeterminacy most likely originates with small estimates of additive genetic variance for some personality dimensions. Altering starting values or other sorts of parameter constraints were ineffective in producing sensible estimates or lead to convergence issues. For these reasons, we interpret the models in which the A and D cross-pathway are constrained to equality as the best fitting and most conservative account of the data.

Additionally, we redid the analyses after dropping opposite sex twins as suggested by a reviewer. Results are reported in tables S5-S8. Having same-sex twins in the data ensures that heritability estimates are not inflated due to possible differential treatment of opposite sex twins. The obtained results were similar to the original ones.

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| Table S1  Results of alternative bivariate models (DV= parental warmth) | | | | | | | |
|  | Equal cross-paths | | | Additive only  cross-path | | Dominance only cross-path | |
|  | a11 | d11 | a21/d21 | a11 | a21 | d11 | d21 |
| E | .04(.04) | **.61(.04)** | .05 (.04) | .09(.05) | **.51 (.07)** | **.61(.04)** | .06 (.04) |
| A | .14(.11) | **.54(.05)** | **.13 (.04)** | **.18(.05)** | **.12 (.07)** | **.55(.04)** | **.15 (.05)** |
| C | .10(.06) | **.55(.05)** | **.11 (.04)** | **.15(.05)** | **.52 (.07)** | **.56(.04)** | **.12 (.05)** |
| N | .02(.04) | **.52(.04)** | -.05 (.05) | .06(.05) | **-.51 (.07)** | **.52(.04)** | -.05 (.05) |
| O | .23(.25) | **.53(.12)** | .07 (.03) | .14(.42) | .38 (1.13) | **.56(.15)** | .08 (.05) |
| Note: Numbers in bold font are statistically significant at *p* < .05. Standardized parameter estimates are reported with standard errors in parentheses. E = extraversion. A = agreeableness. C = conscientiousness. N = neuroticism. O = openness. | | | | | | | |

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| Table S2  Results of alternative bivariate models (DV= parental stress) | | | | | | | |
| Equal cross-paths | | | | Additive only  cross-path | | Dominance only  cross-path | |
|  | a11 | d11 | a21/d21 | a11 | a21 | d11 | d21 |
| E | .009(.03) | **.61(.04)** | -.02 (.05) | .04(.05) | **-.66 (.11)** | **.61(.04)** | -.02 (.05) |
| A | **0(0)** | **.56(.04)** | **-.20 (.06)** | **.13(.05)** | **-.64 (.11)** | **.56(.04)** | **-.20 (.06)** |
| C | .02(.04) | **.57(.04)** | -.10 (.05) | **.08(.04)** | **-.67 (.10)** | **.56 (.04)** | -.10 (.06) |
| N | .006(.02) | **.52(.04)** | .03 (.06) | .03(.04) | **.66 (.10)** | **.52(.04)** | .03 (.06) |
| O | **0(0)** | **.58(.04)** | -.06 (.06) | .17(.44) | -.14 (.40) | **.55(.15)** | -.06 (.06) |
| Note: Numbers in bold font are statistically significant at *p* < .05. Standardized parameter estimates are reported with standard errors in parentheses. E = extraversion. A = agreeableness. C = conscientiousness. N = neuroticism. O = openness. | | | | | | | |

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| Table S3  Model fit statistics of alternative bivariate models (DV=parental warmth) | | | | | | |
|  | Equal cross-paths | | Additive only cross-path | | Dominance only cross-path | |
|  | CFI | RMSEA | CFI | RMSEA | CFI | RMSEA |
| E | .99 | 0.02 | .99 | .02 | .99 | .02 |
| A | 1 | 0 | 1 | 0 | 1 | 0 |
| C | .98 | .02 | .99 | .02 | .98 | .03 |
| N | .96 | .04 | .96 | .04 | .96 | .04 |
| O | 1 | 0 | 1 | 0 | 1 | 0 |
| E = extraversion. A = agreeableness. C = conscientiousness. N = neuroticism. O = openness. CFI = comparative fit index. RMSEA = root mean square error of approximation. | | | | | | |

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| Table S4  Model fit statistics of alternative bivariate models (DV=parental stress) | | | | | | |
|  | Equal cross-paths | | Additive only cross-path | | Dominance only cross-path | |
|  | CFI | RMSEA | CFI | RMSEA | CFI | RMSEA |
| E | .98 | .02 | .98 | .01 | .98 | .02 |
| A | 1 | 0 | 1 | .007 | 1 | 0 |
| C | 1 | .008 | 1 | .007 | 1 | .008 |
| N | .92 | .03 | .92 | .03 | .92 | .03 |
| O | 1 | 0 | 1 | 0 | 1 | 0 |
| E = extraversion. A = agreeableness. C = conscientiousness. N = neuroticism. O = openness. CFI = comparative fit index. RMSEA = root mean square error of approximation. | | | | | | |

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| Table S5  Twin Correlations | | |
| **Variable** | **Identical Twins** | **Fraternal Twins** |
| Extraversion | .42 | -.04 |
| Agreeableness | .34 | .07 |
| Conscientiousness | .36 | .06 |
| Neuroticism | .34 | -.002 |
| Openness to Experience | .37 | .14 |
| Parental Warmth | .83 | .74 |
| Parental Stress | .59 | .38 |

Opposite sex twins were omitted in this analysis.

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| Table S6  Variance decomposition estimates for parenting and personality variables | | | | |
| Variable | a2 | c2 | d2 | e2 |
| E | 0 [.00,.00] | ----- | .38 [.29,.47] | .62 [.53,.71] |
| A | 0 [.00,.00] | ----- | .32 [.24,.40] | .68 [.60,.76] |
| C | 0 [.00,.00] | ----- | .33 [.24,.43] | .67 [.57,.76] |
| N | 0 [.00,.00] | ----- | .28 [.19,.36] | .72 [.64,.81] |
| O | .03 [-.28,.33] | ----- | .32 [-.02,.66] | .66 [.57,.74] |
| Parental Warmth | .19 [.02, .36] | .63 [.48, .77] | ----- | .18 [.13, .23] |
| Parental Stress | .41 [.10, .71] | .18 [-.05, .41] | ----- | .41 [.30, .52] |
| E= extraversion, A=agreeableness, C=conscientiousness, N= neuroticism, O= openness to experience  Opposite sex twins were omitted in this analysis. | | | | |

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| Table S7  Results of Bivariate Genetic Analyses | | | | | | | | | |
| Panel 1: Parental Warmth | | | | | | | | | |
| Variable | a11 | a21 | a22 | d11 | d21 | c22 | e11 | e21 | e22 |
| E | .006 (.02) | .04(.05) | .42(.10) \*\* | .61(.04) \*\* | .04(.05) | .76(.05) \*\* | .78(.03) \*\* | -.01(.02) | .41(.03) \*\* |
| A | .17(.16) | .11(.04) \* | .40(.10) \*\* | .53(.07) \*\* | .11(.04) \* | .76(.05) \*\* | .82(.03) \*\* | .04(.02) | .41(.03) \*\* |
| C | .15(.09) | .10(.04) \* | .41(.10) \*\* | .54(.06) \*\* | .10(.04) \* | .75(.05) \*\* | .80(.03) \*\* | .03(.02) | .41(.03) \*\* |
| N | .04(.04) | -.06(.05) | .42(.10) \*\* | .48(.04) \*\* | -.06(.05) | .76(.05) \*\* | .83(.03) \*\* | -.004(.02) | .41(.03) \*\* |
| O | .17(.61) | .05(.04) | .42(.10) \*\* | .56(.20) \* | .05(.04) | .76(.05) \*\* | .80(.03) \*\* | -.02(.02) | .41(.03) \*\* |
| Panel 2: Parental Stress | | | | | | | | | |
| Variable | a11 | a21 | a22 | d11 | d21 | c22 | e11 | e21 | e22 |
| E | .01(.03) | -.03(.06) | .63(.12) \*\* | .61(.04) \*\* | -.03(.06) | .43(.14) \* | .78(.03) \*\* | .02(.03) | .64(.04) \*\* |
| A | .22(.42) | -.26(.11) \* | .51(.16) \* | .52(.19) \* | -.26(.11) \* | .50(.11) \*\* | .82(.03) \*\* | -.06(.04) | .64(.05) \*\* |
| C | .02(.05) | -.09(.05) | .62(.12) \*\* | .56(.04) \*\* | -.09(.05) | .42(.14) \* | .79(.03) \*\* | -.09(.03) \* | .63(.05) \*\* |
| N | 0(.001) | .005(.07) | .63(.12) \*\* | .48(.04) \*\* | .005(.07) | .43(.13) \* | .83(.03) \*\* | .14(.04) \*\* | .62(.04) \*\* |
| O | 0(0) \*\*\* | -.06(.06) | .63(.12) \*\* | .58(.04) \*\* | -.06(.06) | .43(.14) \* | .80(.03) \*\* | .005(.04) | .64(.05) \*\* |
| The additive genetic and nonadditive genetic cross-paths were constrained to be equal.  E= extraversion, A=agreeableness, C=conscientiousness, N= neuroticism, O= openness to experience  \*\**p* <.01, \*\*\**p* <.001. All p-values are from two-tailed tests  Opposite sex twins were omitted in this analysis. | | | | | | | | | |

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| Table S8  Results of Multivariate genetic analyses | | | | | | |
| Panel 1: Additive genetic effects matrix | | | | | | |
|  | E | A | C | N | O | Parenting Variable |
| E | 0(.08)  0(.08) | .17(.04) \*\*\* | .14(.04) \*\*\* | -.09(.05) | .009(.05) | .05(.04) |
| A | .17(.04) \*\*\* | .04(.14)  .05(.13) | .28(.05) \*\*\* | -.13(.06) \* | .04(.05) | .13(.06) \* |
| C | .15(.05) \* | .29(.05) \*\*\* | 0(0)  0(0) \* | .02(.08) | -.05(.13) | -.06(.09) |
| N | -.10(.05) \* | -.13(.05) \*\* | .02(.08) | 0(0)  0(0) \*\*\* | -.03(.10) | .03(.08) |
| O | .007(.05) | .05(.05) | -.06(.11) | -.04(.11) | 0 (0)  .05(.05) | .03(.11) |
| Parenting Variable | -.02(.05) | -.22(.06) \* | .24(.12) \* | -.16(.11) | .005(.13) | .38(.27)  .12(.17) |
| Panel 2: Dominant genetic/shared environmental effects matrix | | | | | | |
|  | E | A | C | N | O | Parenting Variable |
| d11 | .62(.04) \*\*\*  .62(.04) \*\*\* | .50(.11) \*\*\*  .51(.09) \*\*\* | .32(.10) \*  .33(.08) \*\*\* | .43(.08) \*\*\*  .43(.08) \*\*\* | .58(.16) \*\*\*  .58(.17) \*\* | ----  ---- |
| c22 | ----  ---- | -----  ---- | ----  ---- | ----  ---- | ----  ---- | .75(.04) \*\*\*  .55(.09) \*\*\* |
| Panel 3: Nonshared environmental effects matrix | | | | | | |
|  | E | A | C | N | O | Parenting Variable |
| E | .77(.03) \*\*\*  .77(.03) \*\*\* | .20(.04) \*\*\* | .15(.04) \*\*\* | .03(.04) | .24(.04) \*\*\* | -.01(.02) |
| A | .20(.04) \*\*\* | .80(.03) \*\*\*  .79(.02) \*\*\* | .28(.03) \*\*\* | -.03(.04) | .08(.03) \* | .04(.02) |
| C | .14(.04) \*\*\* | .28(.03) \*\*\* | .73(.03) \*\*\*  .73(.03) \*\*\* | .05(.03) | .11(.03) \* | .03(.02) |
| N | .03(.05) | -.03(.04) | .06(.04) | .82(.03) \*\*\*  .82(.03) \*\*\* | .06(.03) | -.005(.02) |
| O | .24(.03) \*\*\* | .08(.03) \* | .11(.04) \* | .06(.03) | .74(.03) \*\*\*  .74(.03) \*\*\* | -.03(.02) |
| Parenting Variable | .02(.03) | -.07(.04) | -.08(.03) \* | .15(.03) \*\*\* | .003(.03) | .41(.03) \*\*\*  .62(.05) \*\*\* |
| Note. Results for parental warmth displayed on the upper diagonal. Results for parental stress displayed on the lower diagonal.  E= extraversion, A=agreeableness, C=conscientiousness, N= neuroticism, O= openness to experience  \* *p* < .05, \*\**p* <.01, \*\*\**p* <.001. All p-values are from two-tailed tests  Opposite sex twins were omitted in this analysis. | | | | | | |