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TITLE: Effects of Genetic Likelihood for Extraversion/Surgency on Preschoolers' Prosocial Behaviors in Ambiguous Situations

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ABSTRACT:

The ability to behave prosocially in ambiguous situations is an important skill for navigating diverse interpersonal situations. The development of prosocial behavior may be influenced by parenting, particularly in shy children; less is known about extraverted children. We examined the interaction between genetic likelihood for temperamental extraversion/surgency and parent agreeableness on children's prosocial behaviors in ambiguous situations. We hypothesized that parent agreeableness would be related to children's prosociality differentially depending on children's extraversion/surgency.

Children from the Southern Illinois Twins/Triplets and Siblings Study¹ (72 MZ, 108 DZ) were tested at age 5 on prosocial responses using a picture vignette series. Parents rated child temperament at age 4 and their own personality when children were 5. A genetic likelihood index was calculated for extraversion/surgency (GLIE) based on co-twin's temperament and genetic relatedness.

Multilevel modeling showed a significant interaction between GLIE and maternal agreeableness predicting child prosocial responses in ambiguous social situations. Children at genetic risk for low scores on extraversion/surgency were significantly more likely to give prosocial responses if their mothers were more agreeable. Maternal

agreeableness had no effect for children genetically likely to be high on extraversion/surgency.

Thus, children at genetic risk for low extraversion/surgency were at risk of responding less prosocially unless their mothers are highly agreeable. Interventions aimed at increasing prosociality in shy children should focus on increasing positivity in their rearing environments.

¹ DiLalla, L.F. & Jamnik, M.R. (2019). The Southern Illinois Twins/Triplets and Siblings Study (SITSS): A longitudinal study of early child development. *Twin Research and Human Genetics*.

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