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Short Note on Behavioral Genetic Studies of Child Temperament

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Editorial Note

Behavioral studies suggest that genetic factors play a role in individual differences in a child's temperament. In this task, researchers use genetically beneficial samples to break down the observed variance of temperamental traits into genetic, shared, and non-shared environmentally dispersed components. Heritability, or genetic effect size, is part of the phenotypic variance due to genetic factors. Behavioral similarities need to be closely related to genetic relationships if genetic effects are important to the trait or behaviour. For example, most theories of temperament assume that temperament has a biological or constitutional basis. If so, genetically identical twins who share all genes should be more similar in temperament than dizygotic twins who, on average, share only half of the isolated genes.

Twin, adoption, and twin / sibling studies provide consistent evidence of genetic effects on most aspects of early childhood, mid-childhood, and adolescent temperament. Heritability estimates range from 0.20 to 0.60, suggesting that genetic differences between individuals account for approximately 20 to 60 percent of population variation in temperament. However, modern behavioral studies rarely focus on genetic estimation, as whether a particular temperament trait is hereditary is usually not the most interesting question. This article describes three new trends in temperament behavioral research that can go beyond simple heritability estimates to significantly change the way we think about temperament and perhaps genetic and environmental impacts on temperament in general.

Context effects can be even more subtle. The level of activity of the five-month-old twins, evaluated when watching the television sequence with a neutral and happy look, was hereditary depending on whether the actor was a mother or an unknown stranger. In the context of unknown women, genetic factors accounted for approximately 20 percent of fluctuations in activity levels under both neutral and well-being conditions. The remaining differences were due to the impact of the unshared environment. On the other hand, when the same baby looks at the mother's facial expressions, 14 to 23 percent of the variance is explained because individual differences in activity are due solely to the environment and shared environmental impacts. Less robust, similar patterns of modest genetic effects appeared in the unknown, but not in the well-known context of social gaze and gaze aversion. Even if there were no differences in physical circumstances or tasks, the etiology of the energetic dimension was not the same in the context of different actors.

GxE analysis allows for a more differentiated understanding of the etiology of temperament and presents new signs of direct and indirect environmental effects on temperament. The shared environment can directly affect individual differences in temperament in certain circumstances. The environment can also indirectly affect temperament by regulating the expression of the child's genetically affected temperament, which increases the child's genetic susceptibility to later emotional and behavioral problems. May increase or decrease. This adds an interesting twist to the concept of sensitivity differences and suggests that some temperaments may be more sensitive to the environment. The GxE results we checked suggest that different sensitivities of temperament may result from certain environmental experiences.