Environment More than Genes Determines Child's Social Aggressiveness

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Children's aggressive behavior incorporates more than the infliction of physical harm. Children can also hurt their peers through more subtle forms of aggression, for example through social exclusion or rumor spreading, which is often referred to as "social aggression." Our study found that this form of aggression, usually an outgrowth of physical aggression, is related more to a child's environment than to his or her genetic background, suggesting that intervention could have a significant effect.

The study investigated how social aggression develops, using a sample of 234 six year-old twin pairs. We had the children's peers and teachers rate their physical and social aggression. In particular, we examined the relative roles of genetic versus environmental factors in the development of social aggression.

Overall, we found that genetic factors could explain only a small extent of social aggression (approximately 20 percent); the rest is the result of environmental factors such as parental behavior or peer influence. In contrast, genes account for more than half of individual differences in physical aggression. What's more, social and physical aggression share most of their underlying genetic factors but show very few overlapping environmental factors. Our findings also show that high levels of physical aggression lead to high

levels of social aggression, supporting the notion that a largely genetically based aggressive personality is initially expressed through physical means, which are then gradually replaced by socially aggressive strategies.

Whether and when this developmental shift occurs, however, may depend on the extent to which the child is exposed to an environment that specifically promotes the use of social aggression. Our results have important implications for preventive interventions, since reducing physically aggressive behavior at an early age might also help prevent the development of social aggression in young children.