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Environment More than Genes Determines Child's Social Aggressiveness

Anyone who has watched a clique of third-grade girls overtly ignore another little girl understands the hurt this type of aggression – called social aggression – can inflict upon others. Now a study published in the July/August issue of the journal *Child Development* finds 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.

Study researchers from the University of Quebec at Montreal, Laval University, and the University of Montreal, all in Canada, investigated the origins of social aggression through a sample of 234 six-year-old twins. The researchers had the children's peers and teachers rate their physical and social aggression. Overall, researchers found, 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. Most notably, said lead researcher Mara Brendgen, associate professor at the University of Quebec at Montreal, social and physical aggression share most of their underlying genetic factors but show very few overlapping environmental factors.

The researchers also found 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," says Dr. Brendgen.

"Our results have important implications for preventive interventions," she says, "as they suggest that reducing physically aggressive behavior at an early age might also help prevent the development of social aggression in young children."

Summarized from Child Development, Vol. 76, Issue 4, *Examining Genetic and Environmental Effects on Social Aggression: A Study of 6-Year Old Twins* by Brendgen M (University of Quebec at Montreal), Dionne G and Boivin M (Laval University), Vitaro F, Pérusse D, and Girard A (all University of Montreal). Copyright 2005 The Society for Research in Child Development, Inc. All rights reserved.