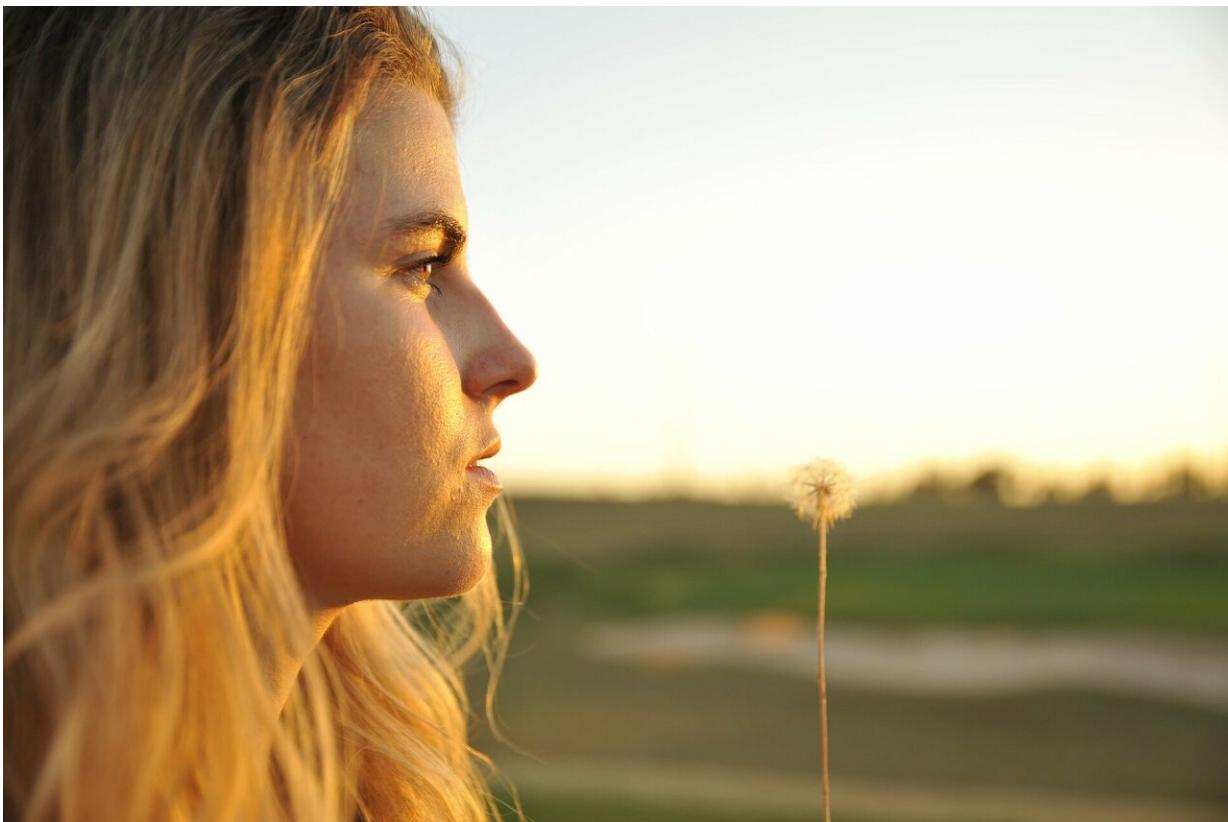


Some personal beliefs and morals may stem from genetics

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A new baby is often welcomed with speculation about whether they got their eyes and nose from mom or dad, but researchers say it may be possible for children to inherit their parents' moral characteristics, as

well.

The researchers found that while parents can help encourage their children to develop into responsible, conscientious adults, there is an underlying genetic factor that influences these traits, as well.

Amanda Ramos, Training Interdisciplinary Educational Scientists fellow at Penn State, said she hopes the study can help start a conversation about how and why these characteristics—referred to as "virtuous character"—develop.

"A lot of studies have shown a link between parenting and these virtuous traits, but they haven't looked at the [genetic component](#)," Ramos said. "I thought that was a missed opportunity because parents also share their genes with their children, and what we think is parents influencing and teaching their children these characteristics may actually be due, at least in part, to genetics."

Previous research has found associations between virtuous qualities like [social responsibility](#) and conscientiousness with well-being and civic engagement. But while school-based interventions have been developed to help promote these traits, they are not always successful. Ramos wanted to dig deeper and explore whether genetics could explain why some people develop these traits while others do not.

The researchers used data from 720 pairs of siblings—including identical and fraternal twins, full siblings in divorced and non-divorced families, half siblings, and unrelated siblings—and their parents.

Ramos said including pairs of siblings with a wide variety of relatedness was helpful to discovering both genetic and environmental factors that influence traits. For example, identical twins have identical DNA, while step-siblings do not share any genes but do share a home, or

environment.

"If [identical twins](#) are more similar than [fraternal twins](#), for example, it's assumed there's a genetic influence," said Ramos. "Including multiple degrees of relatedness can give you more power to disentangle the genetic influences from the shared environment."

The researchers gathered participants' data first during adolescence and then again in young adulthood. They measured parental positivity—such as responsiveness and giving praise—as well as parental negativity, like yelling and conflict. They also measured the children's responsibility during adolescence and conscientiousness during young adulthood.

After analyzing the data, the researchers found that while positive parenting was associated with their children being more responsible and conscientious, those associations were stronger in siblings that were more closely related.

Ramos said that because of the similarity of the siblings, the results suggest that the traits are partially genetic.

"Essentially, we found that both genetics and parenting have an effect on these characteristics," Ramos said. "The way children act or behave is due, in part, to genetic similarity and parents respond to those child behaviors. Then, those behaviors are having an influence on the children's social responsibility and conscientiousness."

Jenae Neiderhiser, Distinguished Professor of Psychology and Human Development and Family Studies at Penn State, said the findings—recently published in the journal *Behavior Genetics*—help better explain how parents shape their children's character.

"Most people assume that parenting shapes the development of virtuous

character in children via entirely environmental pathways," Neiderhiser said. "But our results suggest there are also heritable influences. This doesn't mean that if parents are conscientious that their children also will be regardless of how the children are parented. It does mean, however, that children inherit a tendency to behave in a particular way and that this shouldn't be ignored."

Ramos added that while she and the other researchers found a genetic element to the development of virtuous characteristics, that does not mean the traits were completely determined by DNA.

"Your genes are not totally deterministic of who you are," Ramos said. "Genes simply give you a potential. People still make their own choices and have agency in shaping who they become."

More information: Amanda M. Ramos et al, Did I Inherit My Moral Compass? Examining Socialization and Evocative Mechanisms for Virtuous Character Development, *Behavior Genetics* (2019). [DOI: 10.1007/s10519-018-09945-4](https://doi.org/10.1007/s10519-018-09945-4)

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