

# Antisocial behaviour mainly a consequence of gene interactions

October 6 2017

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Credit: AI-generated image ([disclaimer](#))

Individual genes have little influence in the development of antisocial behaviour. However, the interaction of genes as a whole could explain some of the differences in antisocial behaviour. This was revealed by international research among more than 25,000 participants in which the researchers Jorim Tielbeek, Arne Popma, Tinca Polderman and Danielle

Posthuma of VUmc and VU Amsterdam were involved. Tielbeek carried out this research with funding from the NWO programme Research Talent. The research was published today in *JAMA Psychiatry*.

PhD researcher Tielbeek: "This is interesting news. Lawyers often wrongly try to have a suspect declared non compos mentis on the basis of a single or several genes. With these results, this approach seems highly disputable."

A global team of researchers investigated the DNA of more than 25,000 participants to determine which genetic [influences](#) exist for antisocial behaviour. Unlike previous studies, the current research provides no evidence for the involvement of individual genes with strong effects – such as the 'warrior gene' Monoamine oxidase A (MAOA) – in the development of antisocial behaviour.

## Highest level of education

The effects of individual genes are minuscule, according to the study, but the joint effect of all genes might explain a part of the variation in antisocial behaviour. In addition, the study shows that the same [genes](#) that influence antisocial behaviour are negatively correlated with the highest level of education somebody has received. In other words, the higher the level of education, the lower the chance of antisocial behaviour.

The study only focused on genetic variants in individuals of European origin that occur reasonably often (more than 1%). It is expected that more statistical data through an increased number of participants will lead to the discovery of genetic variants with small effects.

The researchers emphasise that the genetic influences can only explain part of the group differences in antisocial [behaviour](#). Environmental

influences, such as traumatic experiences during younger years, carry at least as much weighting. Tielbeek: "Future research should focus on the interaction between biological characteristics, psychological factors and the environment. That is where the best chances lie for understanding and combating the development of [antisocial behaviour](#)."

**More information:** Jorim J. Tielbeek et al. Genome-Wide Association Studies of a Broad Spectrum of Antisocial Behavior, *JAMA Psychiatry* (2017). [DOI: 10.1001/jamapsychiatry.2017.3069](https://doi.org/10.1001/jamapsychiatry.2017.3069)

Provided by Netherlands Organisation for Scientific Research (NWO)

Citation: Antisocial behaviour mainly a consequence of gene interactions (2017, October 6)  
retrieved 6 May 2024 from  
<https://medicalxpress.com/news/2017-10-antisocial-behaviour-consequence-gene-interactions.html>

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