

NAME OF PRESENTING AUTHOR: Camiel van der Laan

EMAIL ADDRESS OF PRESENTING AUTHOR: c.m.vander.laan@vu.nl

LOCATION OF PRESENTING AUTHOR: Europe

TIME ZONE OF PRESENTING AUTHOR: Central European Summer Time (GMT+2)

TYPE OF SUBMISSION: Oral paper

MEMBER STATUS:

Associate

ELIGIBLE FOR THOMPSON AWARD: Yes

ELIGIBLE FOR ROWEWARD: No

---

TITLE: Continuity of polygenetic influences on aggressive behavior across the life course

FULL AUTHOR LIST: Camiel M. van der Laan<sup>1,2</sup>, José J. Morosoli-García<sup>3</sup>, Lucia Colodro-Conde<sup>3</sup>, Sarah Medland<sup>3</sup>, Nicholas G. Martin<sup>3</sup>, Jaakko Kaprio<sup>4</sup>, Teemu Palviainen<sup>5</sup>, Steve G.A. van de Weijer<sup>2</sup>, Michel G. Nivard<sup>1</sup>, and Dorret I. Boomsma<sup>1</sup>

AFFILIATIONS:

<sup>1</sup>Department of Biological Psychology, Vrije Universiteit, Amsterdam, The Netherlands

<sup>2</sup>The Netherlands Institute for the Study of Crime and Law Enforcement, Amsterdam, The Netherlands.

<sup>3</sup>QIMR Berghofer Medical Research Institute, Brisbane, Queensland, Australia.

<sup>4</sup>Institute for Molecular Medicine, Helsinki, Finland.

KEYWORDS: Aggressive behavior, Aggression, Polygenetic Scores, Life Course, Age

ABSTRACT:

Aggressive behavior tends to decrease with age. However, also at higher ages there is still much variation in the extent to which individuals exhibit aggressive behavior. In most cases, individuals retain their relative positions in the extent of aggressive behavior within their age group. The most aggressive child will most likely grow up to be the most

aggressive adult. In this study, we investigate whether genetic risk factors in childhood also increase risk for aggressive behavior in adolescence and adulthood.

In three genotyped cohorts from the Netherlands, Australia, and Finland, we calculated polygenic scores based on a large genome wide meta-analysis of aggression phenotypes in children (Ip et al., submitted for publication). We then modelled the effect of these polygenic scores on aggression in six age-bins with generalized equation estimation. Additionally, we modelled the interaction between the polygenic scores and age by applying ‘rolling weights’ to mixed effects models, with the weights of observations shifting from age 12 to 70, in increments of one year.

Preliminary results suggest we can predict aggressive behavior in adolescents and adults from polygenic scores based on childhood aggressive behavior. The effect decreases with age, diminishing around age 35. Results suggest that genetic factors play a role in continuity of aggression from childhood to adulthood.

## References

Ip, H.F. et al. (2020). Genetic Association Study of Childhood Aggression across raters, instruments and age. Submitted for publication.

<https://www.biorxiv.org/content/10.1101/854927v1>

GRANT SUPPORT:

-----  
-----