Multiple paths to problem behaviours

DOI: 10.1038/MP.2014.95

Genetic and environmental factors may be independently involved in the development of callous-unemotional (CU) traits in young teenagers. The findings, published this week in Molecular Psychiatry, suggest that a person’s anxiety and depression levels could indicate which of these two factors has the greater influence on CU traits.

CU traits — characterized by a lack of empathy and disregard for others — in young teenagers are associated with early-onset persistent conduct problems, such as not following rules and behaving in a socially unacceptable way, and increase the risk of adult psychopathy. Previous research has suggested that youth with low anxiety and depression may develop CU traits differently than youth with high anxiety and depression. Additionally, DNA methylation — a chemical modification that can affect the expression of genes — of the oxytocin receptor gene (OXTR) has been implicated in the modulation of
prosocial behaviours that are impaired in youth with CU traits. However, much about the development of CU traits remains unclear.

Edward Barker and colleagues analysed anxiety and depression levels, pre- and post-natal environmental risk factors, and methylation of OXTR (at birth, and ages 7 and 9 years old) in 84 youth who displayed CU traits at age 13. The authors found that in youth with low levels of anxiety and depression, OXTR methylation at birth was associated with CU traits and lower levels of victimization, such as bullying, during childhood. In contrast, in youth with CU traits with high levels of anxiety and depression, the researchers found CU traits were associated with environmental risk, including prenatal factors, such as family conflict and intimate partner violence. The results suggest that there may be distinct developmental pathways under which CU traits develop. This finding may help to identify proper timing and targets of intervention to prevent the emergence of CU traits; however, larger and more detailed studies are needed to confirm the findings.

CONTACT
Edward Barker (King’s College London, UK)
Please contact via the King’s College London public relations office:
Tel: +44 207 848 5378; E-mail: louise.a.pratt@kcl.ac.uk

Editorial contact at Molecular Psychiatry:
Julio Licinio (South Australian Health and Medical Research Institute, Adelaide, Australia)
Tel: +61 8 8116 4400; E-mail: julio.licinio@sahmri.com

Please link to the scientific paper in online versions of your report (the URL will go live after the embargo ends): http://dx.doi.org/10.1038/MP.2014.95

Press contacts:
For media inquiries relating to embargo policy for the journal Molecular Psychiatry:

Michael Stacey (Nature London)
Tel: +44 20 7843 4795; E-mail: michael.stacey@nature.com

Neda Afsarmanesh (Nature New York)
Tel: +1 212 726 9231; E-mail: n.afsarmanesh@us.nature.com

About Nature Publishing Group (NPG)

Nature Publishing Group (NPG) is a publisher of high impact scientific and medical information in print and online. NPG publishes journals, online databases and services across the life, physical, chemical and applied sciences and clinical medicine.

Focusing on the needs of scientists, Nature (founded in 1869) is the leading weekly, international scientific journal. In addition, for this audience, NPG publishes a range of Nature research journals and Nature Reviews journals, plus a range of prestigious academic journals including society-owned publications. Online, nature.com provides over 5 million visitors per month with access to NPG publications and online databases and services, including Nature News and NatureJobs plus access to Nature Network and Nature Education’s Scitable.com.

Scientific American is at the heart of NPG’s newly-formed consumer media division, meeting the needs of the general public. Founded in 1845, Scientific American is the oldest continuously published magazine in the US and the leading authoritative publication for science in the general media. Together with scientificamerican.com and 15 local language editions around the world it reaches over 3 million consumers and scientists. Other titles include Scientific American Mind and Spektrum der Wissenschaft in Germany.
Throughout all its businesses NPG is dedicated to serving the scientific and medical communities and the wider scientifically interested general public. Part of Macmillan Publishers Limited, NPG is a global company with principal offices in London, New York and Tokyo, and offices in cities worldwide including Boston, Buenos Aires, Delhi, Hong Kong, Madrid, Barcelona, Munich, Heidelberg, Basingstoke, Melbourne, Paris, San Francisco, Seoul and Washington DC. For more information, please go to www.nature.com.