The Molecular Genetic Architecture of Human Behavior: Biological and epidemiological insights from the GWAS revolution

Meddens, S.F.W.

2019

document version
Publisher's PDF, also known as Version of record

Over five decades of family studies have shown that all forms of human behavior are partially heritable. “Human behavior” can mean psychological characteristics such as personality and intelligence, but also lifestyle choices such as eating habits. I have studied which genetic variants predict behavior, and have examined the biological functions of these variants. Different types of human behavior were studied: dietary intake, risk-taking behavior, wellbeing, and educational attainment. Research data of up to a million participants and of millions of genetic variants provided insight into the biological basis of human behavior. I found that dietary intake is directed by the brain; that genes linked to educational attainment are mainly active in the prenatal period; that risk-taking behavior cannot be predicted by genes with a dopamine function; and that wellbeing has distinct genetic causes from depressive symptoms. The studies were performed at the cusp of the “genomics revolution” and have provided diverse insights into the biological basis of human behavior.