# The Economics and Econometrics of Gene-Environment Interplay

## Biroli et al. (2022)

Economists and social scientists have debated the relative importance of nature (one’s genes)  
and nurture (one’s environment) for decades, if not centuries. This debate can now be informed  
by the ready availability of genetic data in a growing number of social science datasets. This  
paper explores the potential uses of genetic data in economics, with a focus on estimating the  
interplay between nature and nurture (or genes and environments). We discuss how economists can  
benefit from incorporating genetic data into their analyses even when they do not have a direct  
interest in estimating genetic effects. We argue that gene-by-environment (G × E) studies can  
be instrumental for (i) testing theoretical predictions, (ii) uncovering economic or behavioral  
mechanisms through which genetic effects operate, and (iii) analyzing heterogeneity in treatment effects of policies and interventions, and targeting (policy) interventions. We introduce the reader to essential genetic terminology, develop a conceptual economic model to interpret gene-by-environment interplay, and provide practical guidance to empirical researchers.