

**Wednesday, May 10, 2023, 14-16 CEST**

**Jan Sprenger (University of Turin)**  
**"The Productive Model of Explanation"**

The explanation of psychological phenomena is a central aim of psychological science. However, the nature of explanation and the processes by which we evaluate whether a theory explains a phenomenon are often unclear. Consequently, it is often unknown whether a given psychological theory indeed explains a phenomenon. We address this shortcoming by characterizing the nature of explanation in psychology, and proposing a framework in which to evaluate explanation. We present a productive account of explanation: a theory putatively explains a phenomenon if and only if a formal model of the theory produces the statistical pattern representing the phenomenon. Using this account, we outline a workable methodology of explanation: (a) explicating a verbal theory into a formal model, (b) representing phenomena as statistical patterns in data, and (c) assessing whether the formal model produces these statistical patterns. In addition, we explicate three major criteria for evaluating the goodness of an explanation (precision, robustness, and empirical relevance), and examine some cases of explanatory breakdowns. Finally, we compare our proposal to other models of explanation from philosophy of science and discuss how our model contributes to constructing and developing psychological theories with high explanatory power.

The talk is based on joint work with Noah van Dongen, Riet van Bork and Denny Borsboom.