THE METHOD OF ARBITRARY FUNCTIONS (MAF)

An international workshop on the current state of the eminent tradition in mathematical statistics initiated by Von Kries and Poincaré, in particular in connection with the role that causal probabilities play in the natural sciences.

FRIDAY 21 SEPTEMBER 2018

Seminar Room A-217, Faculty of Philosophy, Complutense University

Morning Chair: Mario Santos Sousa (UCL & UCM)

9.30 – 10.30: Jacob Rosenthal (University of Konstanz): The Method of Arbitrary Functions as an Interpretation of Probability: The Devil is in the Details

10.30 – 11.00: Coffee Break

11.00 – 12.00: Mauricio Suárez (UCM, Madrid): Explanatory Chances and the Method of Arbitrary Functions
12.00 – 13.00: Wolfgang Pietsch (Technical University Munich): Objective Probabilities based on Causal Symmetries

13.00 – 15.00: Lunch

Afternoon Chair: Laura Nuño de la Rosa (UCM)

15.00 – 16.00: Chloé de Canson (London School of Economics): Two Notions of Objectivity and the Method of Arbitrary Functions
16.00 – 17.00: Michael Strevens (New York University): The Problem of Initial Conditions

17.00 – 17.30 Coffee Break

17.30 -18.30 Roundtable Discussion (Chair: Cristina Villegas, UCM)

For further info and registration: msuarez@filos.ucm.es

Directions: Faculty of Philosophy, Complutense University of Madrid
Metro: Ciudad Universitaria Google map: https://goo.gl/Kc8kqH

ABSTRACTS:

JACOB ROSENTHAL: "The Method of Arbitrary Functions as an Interpretation of Probability: The Devil is in the Details"

The Method of Arbitrary Functions promises to provide precise truth conditions for probability statements in certain areas, and in this way to give rise to an independent interpretation of probability, combining objective and epistemic elements in a very natural manner. All advocates of such an interpretation, however, found that they were forced to supplement the rather straightforward basic idea with less transparent additional clauses to make the whole thing work. I will survey some of these attempts, identifying significant differences and specific problems.

MAURICIO SUÁREZ: "Explanatory Chances and the Method of Arbitrary Functions"

I argue first that chance has an explanatory role in statistical models – whether under a deterministic or stochastic dynamics. I then argue that one salient result of the Method of Arbitrary Functions is to demonstrate he type of invariance under a range of interventions in systems with deterministic dynamics that is typical of causal explanation more generally.

WOLFGANG PIETSCH: "Objective probabilities based on causal symmetries"

It is commonly acknowledged that the two most important types of evidence for determining objective probabilities are relative frequencies and symmetries. While frequency interpretations of probability are well known, I examine whether an interpretation can be based merely on symmetries. First, I argue that those symmetries must be causal. Essentially, a causal symmetry requires that the causal structure responsible for the probability distribution of outcome events is invariant under a relabeling of the outcome events. Causal symmetries determine the relative probabilities of the relabeled outcome events according to a rule that I call the principle of causal symmetry, which is an objective counterpart to the principle of insufficient reason.

CHLOÉ DE CANSON: "Two Notions of Objectivity and the Method of Arbitrary Functions"

My aim in this paper is to temper the excitement in the literature surrounding the method of arbitrary function, and to spell out precisely what it cannot do. I proceed in the following way. In order to see what the method of arbitrary functions can and cannot do for the issue of objective probability against a background of determinism, two things must first be made precise: what the issue is, and what the method is. I show that there are two distinct ways in which probabilities might be said to be objective, and therefore distinct issues putatively resolved by the method of arbitrary functions (§2). I then explain the method of arbitrary functions in detail (§3). Once this has been made clear, it follows almost immediately that the method cannot do much for the conceptual problem at hand (§4–5). I finish with some remarks about which other problems it might help with (§6).

MICHAEL STREVENS: "The Problem of Initial Conditions"

Dynamic approaches to understanding probability in the non-fundamental sciences turn on special properties of physical processes that are apt to produce "probabilistically patterned" outcomes. The dynamic properties on their own, however, are never quite sufficient to produce the patterns; in addition, some sort of assumption about initial conditions must be made, an assumption that typically itself takes a probabilistic form. What grounds the assumption? That is the problem of initial conditions. In this paper I draw on ideas from two earlier publications to provide a partial solution.