Models of Causality and Causal Inference

Description

Tweet

by BarbaraBefani. An annex to BROADENING THE RANGE OF DESIGNS AND METHODS FOR IMPACT EVALUATIONS. Report of a study commissioned by the Department for International Development, APRIL 2012 ,Â by Elliot Stern (Team Leader), Nicoletta Stame, John Mayne, Kim Forss, Rick Davies, Barbara Befani

Introduction

The notion of causality has given rise to disputes among philosophers which still continue today. At the same time, attributing causation is an everyday activity of the utmost importance for humans and other species, that most of us carry out successfully outside the corridors of academic departments. How do we do that? And what are the philosophers arguing about? This chapter will attempt to provide some answers, by reviewing some of the notions of causality in the philosophy of science and â€œembeddingâ€• them into everyday activity. It will also attempt to connect these with impact evaluation practices, without embracing one causation approach in particular, but stressing strengths and weaknesses of each and outlining how they relate to one another. It will be stressed how both everyday life, social science and in particular impact evaluation have something to learn from all these approaches, each illuminating on single, separate, specific aspects of the relationship between cause and effect. The paper is divided in three parts: the first addresses notions of causality that focus on the simultaneous presence of a single cause and the effect; alternative causes are rejected depending on whether they are observed together with effect. The basic causal unit is the single cause, and alternatives are rejected in the form of single causes. This model includes multiple causality in the form of single independent contributions to the effect. In the second part, notions of causality are addressed that focus on the simultaneous presence of multiple causes that are linked to the effect as a â€œblockâ€• or whole: the block can be either necessary or sufficient (or neither) for the effect, and single causes within the block can be necessary for a block to be sufficient (INUS causes). The third group discusses models of causality where simultaneous presence is not enough: in order to be defined as such, causes need to be shown to actively manipulate / generate the effect, and focus on how the effect is produced, how the change comes about. The basic unit here â€“ rather than a single cause or a package â€“ is the causal chain: fine-grained information is required on the process leading from an initial condition to the final effect.

The second type of causality is something in-between the first and third: it is used when there is no finegrained knowledge on how the effect is manipulated by the cause, yet the presence or absence of a number of conditions can be still spotted along the causal process, which is thus more detailed than the bare â€œbeginning-endâ€• linear representation characteristic of the successionist model.

RD Comment: I strongly recommend this paper

For more on necessary and/or sufficient conditions see this blog posting which shows how different

combinations of causal conditions can be visually represented and recognised, using Decision Trees

Category

1. Uncategorized

Tags

1. Befani
2. causality
3. DFID
4. Stern

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