



Why things happen – Developing the critical realist view of causal mechanisms



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ABSTRACT

Events happen within the organizational world not by chance but for reasons. It is surely the task of management research to try to explain why these events occur. This requires us to understand the nature of causality but, in general, this is seldom discussed in the management or IS literature. The standard, positivist view underlying statistical analysis is the Humean one of constant conjunctions of events leading to universal laws. Against this, many constructivists find the whole idea of external causality implausible. In this paper we explore a third alternative that is developing strongly within the philosophy of science, social theory and critical realism – the mechanisms view. This proposes that events are generated through the interaction of specific mechanisms endowed with causal powers that may or may not be triggered, and may or may not be countervailed. In particular, the paper develops some of the fundamental concepts such as the nature of events, emergent properties, the difference between properties and powers, causal interactions between levels, absences as causes, event causality and generative causality, and abstracting causal regularities. The paper concludes by illustrating these ideas with a series of empirical case studies.

1. Introduction

Things happen in and around organizations. The organizational world is a constant flux of unfolding events which involve people, technology, materials, money, power, social structures and ideas. One of the primary purposes of management research is to understand and to explain these events. Assuming that one does not think that they simply happen by chance, and their patterned nature makes this statistically inconceivable, then one has to assume that there is some form of *causation* at work. However, within the broad ambit of information systems and management research there are several, largely exclusive, conceptualizations of causation. Moreover, it is a subject that, until relatively recently, has been little discussed within the management literature. Most research is carried out within a particular paradigmatic silo – positivist, constructivist, critical or realist – making implicit, but seldom justified causative assumptions.

Durand and Vaara (2009), in a stimulating paper, outline four general positions within the field of strategy although they can be applied equally to information systems. The positivist view that causation concerns empirically generated laws based on constant conjunctions of events; the constructionist¹ view that management research is more concerned with interpretation than explanation and therefore talk of external causes is somewhat spurious; the (critical) realist view of generative causality through the interactions

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¹ We will use the terms constructionist and constructivist inter-changeably.

of powerful mechanisms; and the pragmatist view that judges causal beliefs in terms of their instrumental values. After an analysis of the strengths and weaknesses of these positions, they go on to distil four conditions that they claim are necessary for an understanding of causality: i) that causation needs to be distinguished from constant conjunctions or statistical association; ii) that causation results from a complex interplay of mechanisms and forces; iii) that we must recognize the importance of social interventions and actors' constructions; and iv) that explanations have instrumental value depending on their explanatory power.

There is much in Durand and Vaara's approach with which we agree, and in this paper we wish to develop from it, highlighting what we perceive as limitations and developing more fully a particular approach to causation. This approach has grown from three different disciplinary fields – the philosophy of science, critical realism and systems thinking (Mingers, 2014). We shall call this approach a “mechanisms” view of causation as it is based on the idea that the events we observe and experience are generated through the complex interactions of generative mechanisms (or systems) that have causal powers or tendencies. This approach has been developing strongly within the philosophy of science (Illari & Williamson, 2011) against the traditional hypothetico-deductive model which sees explanation as the deduction of consequences from general laws (covering law model). At the same time, although developed independently, it is a major component of Bhaskar's critical realism, and the idea of a mechanism is essentially the same as a system with emergent properties and powers. We should also point out, in case the idea of a “mechanism” sounds overly physicalist, that generative mechanisms or structures may be non-material, for example social structures, organizations, ideas, motivations and so on. In fact, anything that can be thought to have causal effects in the world. Moreover, there is not just one form of causation but many as Cartwright (1999, p. 119) argues – necessary conditions, sufficient conditions, agents, interventions, contraventions, modifications, enhancements, inhibitions etc.

The structure of the paper is to first review perspectives on causality in IS research in order to identify the weaknesses with current conceptualizations and management research more generally. Our preferred alternative – the CR mechanisms approach – has already been used in IS research but there is a good deal of confusion, not least because of Bhaskar's difficult, and often developing, ideas (Bhaskar, 1978, 1979, 1993, 2002; Bhaskar & Hartwig, 2010). The main purpose of the paper is to develop the approach in a clearer and more consistent manner to facilitate its use in practice. This involves, in Section 3, clarifying concepts such as events, emergent properties, the difference between properties and powers, and causal interactions between different organizational levels and absences as causes. We then, in Section 4, describe the basic braiding between event causality and underlying generative causality including the possibility of abstracting generic causal regularities out of the analysis of specific episodic event. This theoretical approach is illustrated with an analysis of a series of empirical CR case studies and recommendations for practice.

2. Current perspectives on causation

Although causality has not been much researched within IS, there are some significant contributions that should be mentioned. One of the earliest was that of Markus and Robey (1988) who suggested three dimensions for the causal structure of theories: causal agency, logical structure and level of analysis. Before discussing these we should note that they are analyzing the causal structure of theories rather than discussing the nature of actual causation per se. Nevertheless, to the extent that theories are good theories, we should expect that their content corresponds with reality in some way.

In terms of the three dimensions, causal agency includes three possibilities – technology-driven, actor-driven or emergent from a combination of both. Logical structure distinguishes between variance theories, which are essentially theories that relate outcomes to necessary and sufficient conditions at the same time (many statistical models are of this form), and process theories which look at contingent causal connections between events (“changes of state” in their terms) over time. This distinction is similar to the event/generative causality distinction we will make later. Level of analysis can be macro (society or organization), micro (individuals) or both. Although this was a useful framework in its time, it does not really capture more recent theoretical and philosophical developments, and is not directed primarily at causality.

Moving to Durand and Vaara (2009), we will analyze their four forms of causation.

2.1. Positivism/empiricism

It is still plausible to suggest that the dominant perspective in IS research is positivism despite the growth of qualitative, interpretive, critical and even post-modern research paradigms. For this reason, we will begin by looking at the assumptions made about causation within positivist research. Interestingly, the assumptions are inevitably made, but seldom discussed or even recognized. The standard view of the logic of explanation is the hypothetico-deductive model developed in the natural sciences (Hollis, 2002; Manicas, 2006; Rosenberg, 2008). The world is assumed to be governed by universal, general laws and science proceeds by uncovering these laws through repeated observations which lead, by way of induction, to a hypothetical law. Deduction is then used to make predictions from the laws and attempts are made then to observe the predictions and thus confirm or falsify the hypothesis. Generally, such laws are stochastic rather than deterministic and so statistical analysis of the data is necessary particularly, in management and econometrics, regression, structural equation modelling (SEM) or vector autoregression (VAR). Only events that are observable, and preferably measurable in some way, can form the basis of scientific analysis.

This view of deductive explanation rests on a particular philosophical understanding of causation formulated by David Hume (1978 (orig. 1739)), namely a constant conjunction of events. Hume was an empiricist and a sceptic and accepted as real only that which could be directly perceived. He therefore argued that, when we regularly see one event followed by another, e.g., a hammer driving a nail, and we say the hammer caused the movement of the nail we cannot mean anything more than that one event is always followed by another in a constant conjunction. There cannot be more to causation than that; there cannot be any further explanation

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