

# Critical Realism as an Underlying Philosophy for IS Research

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## INTRODUCTION

Many recent articles from within the information systems (IS) arena present an old-fashioned view of realism. For example, Iivari, Hirschheim, and Klein (1998) saw classical realism as seeing “data as describing objective facts, information systems as consisting of technological structures (‘hardware’), human beings as subject to causal laws (determinism), and organizations as relatively stable structures” (p. 172). Wilson (1999) saw the realist perspective as relying on “the availability of a set of formal constraints which have the characteristics of abstractness, generality, invariance across contexts.”

Fitzgerald and Howcroft (1998) presented a realist ontology as one of the foundational elements of positivism in discussing the polarity between hard and soft approaches in IS. Realism is placed alongside positivist, objectivist, etc epistemologies and quantitative, confirmatory, deductive, laboratory-focussed and nomothetic methodologies. Such a traditional view of realism is perhaps justified within the IS arena, as it reflects the historical focus of its use, however, there now needs to be a greater recognition of the newer forms of realism—forms of realism that specifically address all of the positivist leanings emphasised by Fitzgerald and Howcroft (1998). A particular example of this newer form of realism is critical realism. This modern realist approach is primarily founded on the writings of the social sciences philosopher Bhaskar (1978, 1979, 1986, 1989, 1991). The usefulness of such an approach has recently been recognized in the IS arena by Dobson (2001) and Mingers (2002).

## BACKGROUND

Bhaskar’s brand of realism (referred to by Searle, 1995, as a form of external realism) argues that there exists a reality totally independent of our representations of it; the reality and the “representation of reality” operating in different domains—roughly a transitive epistemological dimension and an intransitive ontological dimension. For the realist, the most important driver for decisions on methodological approach will always be the intransitive dimension—the target being to unearth the real mecha-

nisms and structures underlying perceived events. Critical realism acknowledges that observation is value laden, as Bhaskar pointed out in a recent interview:

*...there is no conflict between seeing our scientific views as being about objectively given real worlds, and understanding our beliefs about them as subject to all kinds of historical and other determinations.* (Norris, 1999)

The critical realist agrees that our knowledge of reality is a result of social conditioning and thus cannot be understood independently of the social actors involved in the knowledge derivation process. However, it takes issue with the belief that the reality is a product of this knowledge derivation process. The critical realist asserts that “real objects are subject to value laden observation”; the *reality* and the value-laden *observation of reality* operate in two different dimensions, one intransitive and relatively enduring and the other transitive and changing.

An important aspect of a critical realist approach is that it not only provides direction on the characteristics and behaviour of the underlying objects of enquiry, but it also provides direction as to how to examine these objects. The philosophy is presented as an underlabourer to social enquiry in that it can help with “clearing the ground a little...removing some of the rubbish that lies in the way of knowledge” (Locke, 1894, p. 14). This integral and important role for philosophy in the enquiry process can help to avoid many potentially false pathways and avenues.

For example, Bhaskar (1979) presented fundamental difficulties with the way that prediction and falsification have been used in the open systems evident within the social arena. For the critical realist, a major issue with social investigation is the inability to create closure—the aim of “experiment” in the natural sciences. Bhaskar (1979) argued that this inability implies that theory cannot be used in a predictive manner and can only play an explanatory role in social investigations, because:

*...in the absence of spontaneously occurring, and given the impossibility of artificially creating, closed systems, the human sciences must confront the problem of the direct scientific study of phenomena that only manifest*

*themselves in open systems—for which orthodox philosophy of science, with its tacit presupposition of closure, is literally useless. In particular it follows from this condition that criteria for the rational appraisal and development of theories in the social sciences, which are denied (in principle) decisive test situations, cannot be predictive and so must be exclusively explanatory. (p. 27)*

As Mingers (2002) suggested, such an argument has specific ramifications with respect to the use of statistical reasoning to predict future results. Bhaskar (1979) argued that the primary measure of the “goodness” of a theory is in its explanatory power. From Bhaskar’s perspective, predictive use of theories is not possible in open social systems, and therefore, predictive power cannot be a measure of goodness. From this point of view, theory acts as primarily an explanatory tool for explaining events in hindsight.

Critical realism uses abductive or retroductive reasoning as its main focus. Positivist approaches are associated more with deductive or inductive reasoning. Deductive reasoning is the fundamental reasoning of mathematics, whereby some statement “*p*” leads to implications “*q*”—a movement from the general to the particular. For example, the general claim that “all crows are black” moves to the particular inference that the next one seen will be black. For the crows example, retroductive or abductive reasoning follows from an observation of numerous black crows to a theory as to a mechanism to explain why crows are disposed to be black. As Mingers (2002) described:

*We take some unexplained phenomenon and propose hypothetical mechanisms that, if they existed, would generate or cause that which is to be explained. So, we move from experiences in the empirical domain to possible structures in the real domain. This does not of itself prove that the mechanism exists, and we may have competing explanations, so the next step is to work toward eliminating some explanations and supporting others. (p. 300)*

Outhwaite (1987) similarly suggested that the critical realist method involves “the postulation of a possible [structure or] mechanism, the attempt to collect evidence for or against its existence and the elimination of possible alternatives” (p. 58). The realist agrees that we have a good explanation when (a) the postulated mechanism is capable of explaining the phenomenon, (b) we have good reason to believe in its existence, and (c) we cannot think of any equally good alternatives. Such an explanatory target suggests that philosophical considerations must play an important role in the critical realist method, because such an approach often requires transcending, or

speculating, perhaps nonobservable mechanisms and structures to explain perceived happenings. Such initial proposition is transcendental or metaphysical in its focus, and as such, any explanation or discovery made is seen to be fallible and extendable as knowledge grows. As Wad (2001) argued:

*If we take explanation to be the core purpose of science, critical realism seems to emphasise thinking instead of experiencing, and especially the process of abstraction from the domains of the actual and the empirical world to the transfactual mechanisms of the real world. (p. 2).*

This type of thinking is called transcendental by Bhaskar, in that it gives an important role to the crossing of the divide between the empirical and speculative activities of scientific work. As Wad pointed out, this is necessary because often the experienced world of events is not explainable in terms of the empirical facts but only by way of incorporating nonexperienced mechanisms incorporated in objects that may be within or outside our domain of investigation.

## RESEARCH IMPLICATIONS

Sayer (2000) contended: “Compared to positivism and interpretivism, critical realism endorses or is compatible with a relatively wide range of research methods, but it implies that the particular choices should depend on the nature of the object of study and what one wants to learn about it” (p. 19). As Mingers (2002) suggested, critical realism supports methodological pluralism in that it suggests that an external reality is open to multiple interpretations and understandings.

Yet, critical realism also has important things to say about the objects of enquiry in that it is an ontologically bold philosophy (Outhwaite, 1987, p. 34). It not only encompasses an external realism in its distinction between the world and our experience of it, but it also suggests a stratified ontology and a so-called depth realism in defining the objects that make up such a world. This concept suggests that reality is made up of three ontologically distinct realms: first, the empirical, that is experience; second, the actual, that is events (i.e., the actual objects of experience); and third, the transcendental, nonactual or deep, that is structures, mechanisms, and associated powers. This so-called depth realism proposes that “the world is composed not only of events and our experience or impression of them, but also of (irreducible) structures and mechanisms, powers and tendencies, etc. that, although not directly observable, nevertheless underlie actual events that we experience and govern or produce them” (Lawson, 1997, p. 8). Critical realism, in its

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