# Critical realism as a philosophy and social theory in information science?

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Critical realism
as a philosophy
and social theory

11

## Abstract

**Purpose** – The philosophical position known as critical realism is briefly introduced, and some of its central features are used to connect the philosophy and the realist social theory to some current library and information science (LIS) models of information behaviour.

**Design/methodology/approach** – The paper uses a literature-based analysis of the critical realism concepts of a stratified social reality, the importance of contextualisation, and the relation between structure and agency. These features are discussed in relation to various models of information-seeking behaviour, but also to the "interpretative" approach to information as meaning which can only be achieved through discourses in a human community.

**Findings** – The critical realism perspective could lay a fruitful foundation for an interdisciplinary research field like LIS, and its user studies in particular, concerned with many levels of information creation, seeking, use and processing. It is the task of the LIS researcher to explain the mechanisms that influence the information seeking, not only on an empirical level, by observing the user and his/her discourse community, but also by revealing possible underlying causes and relations.

**Originality/value** – An awareness of the fact that social and cultural structures exist independent of one's knowledge of them has implications on how many central problems in the LIS field are regarded and studied.

**Keywords** Philosophy, Information science, Libraries, Reality, Information research

**Paper type** Conceptual paper

## Introduction

An interdisciplinary research field like library and information science (LIS), and its user studies in particular, concerned with many levels of information creation, seeking, use and processing, both institutional and system-oriented, individual and collectivistic (Wilson, 2002), will naturally contain different ontological, epistemological, and methodological perspectives (Budd (2001) gives an excellent overview). On the one hand, Dervin (2003) rightly points out that we are "drowning in concepts, variables, methods, theories", while, on the other hand, Bates (2002, p. 15) (also rightly) claims that: "the several metatheories driving research in information seeking each have much of value to offer, and should not be placed in a life or death struggle for dominance in our thinking and research".

Nevertheless, research is always a question of making choices. These may be unreflective, but they may also reflect a basic view of science. One choice is what part of reality the researcher wants to focus on; another is what basic assumptions he or she has of what this reality is like. In other words, all theory makes assumptions about the nature of reality, and such ontological assumptions carry implications for the way one conceives knowledge and necessarily regulate how one studies objects or events (Budd,

2001, p. 114; Willmott, 1997). Budd (2001), Hjørland (2004) and Wilson (2002) are among the LIS scholars that point out the importance of a philosophical basis for making both the epistemological and ontological choices that are necessary for conducting research.

In this paper I join the "ontological project" by discussing critical realism (CR), a philosophy of science, and a realist social theory and explanatory framework that has developed from it. A distinctive feature of a realist philosophy is that ontology (the theory of being, which has strong implications for the conceptions of reality) is seen as distinct from epistemology (the theory of knowledge), which means that scientific theorising is based on the assumption that there exists a mind-independent reality. In this respect realism differs from empiricism (the view that knowledge derives from experience of the world), and also from idealism (positing thought and language over matter). In social studies this distinction conditions our analysis: how real is social reality, and how can we best study, for example, the complex social events associated with information seeking and use?

In the study of information seeking and use, the objects of our inquiry are empirical events. We know, however, that events are not transparent, and in fact, in most cases, require more than description. Regardless of the method, the work of theory is to explain the hidden powers – processes or mechanisms – that produce the effects or events that we study. According to the critical realist philosophy, the very possibility of social theory is based on the existence of real social structures and systems that are emergent entities which operate independently of our conception of them, conditioning – but never determining – intentional agential activity, being nonetheless dependent on that human activity to endure or change (Archer, 1995; Willmott 1997, p. 97). This way of thinking about science implies that reality is stratified. Events can be seen, but social mechanisms are not readily observable; they require theory and abstraction. Methods are the tools that scientists use to test how well a given theory – or a related set of concepts – accounts for an empirical event. Science should not be content to study only what we can empirically experience, but the aim of science is to discover (identify and describe) these hidden, or not readily observable, structures and objects that have causal powers to produce effects (Bhaskar, 1989).

The CR philosophy of science also assumes that reality is composed of different levels (e.g. the biological, the psychological, the social, and the cultural level). None of these levels, nor the causes of what occurs on these levels, can be reduced to another level. This is a cornerstone for the analysis and implies that complex social phenomena, such as information need, seeking and use, cannot be explained in terms of mechanisms or processes working at just one level, be it personal, cognitive, discursive or socio-cultural. Here, CR could contribute to an explanatory framework for interdisciplinary research, and for many LIS studies.

In this paper, I discuss such a framework. I do not, however, make any attempt at a deep analysis of realist philosophy in general and CR philosophy in particular, but start with a general short introduction to some central tenets of CR. This is by necessity sketchy, and interested readers are referred to the book *Critical Realism: Essential Readings* (Archer *et al.*, 1998), which makes accessible in one volume several key texts by the most central authors on CR as both a philosophy of science and as a social theory.

Critical realism
as a philosophy
and social theory

13

**The critical realist approach to social science**
CR is a movement in the philosophy of science, starting with the British philosopher Bhaskar's (1978, 1979) writings. It has later been developed for and employed in social theory by Bhaskar (1989) and many others, most notably by Archer (1995, 1996, 2000), Sayer (1992, 1999), Layder (1994) and Collier (1994, 1998). In information systems research, defined as an applied field that is heavily oriented towards the applications of information systems in business, and in many adjacent fields of social science, like organisation research and economics, the philosophical approach of CR has been an object of growing interest (Dobson, 2002; Spasser, 2002; Willmott, 1997; Reed, 2001; Mingers, 2004), although it has also been subject to severe criticism (e.g. Klein, 2004). Mutch (1999, 2002) has suggested that Archer's realist social theory could be a suitable framework for the examination of the use of information in organisations. In these studies there is expressed the need of a greater awareness of structure and process, and of the human being acting as a person, a collective agent, and as a social actor.

*CR as a philosophy of science*
CR as a specific form of realist philosophical theory about the world, human agency and the interaction between these, has developed in debate with a range of philosophical approaches, from positivism to post-modernism, including hermeneutics, neo-Kantianism and pragmatism. The positivist conception of science with "its monistic theory of scientific development and its deductivist theory of scientific structure" (Bhaskar and Lawson, 1998, p. x) is rejected, but as a realist social theory, CR is also critical of postmodernism with its ontological disenchantment and, in Archer's (1998, p. 193) rather harsh words, "the 'methodology' of the linguistic wrong turn".

While empiricism as a particular philosophy of science identifies regularities whose "constant conjunctions" form facts, and Neo-Kantianism recognises the importance of the social activity of scientists in building models of the imagined or imaginary mechanisms which would explain these regularities, CR goes one step further and demands that these models be subject to empirical testing to determine whether they are real or imaginary (Bhaskar, 1978). CR differs from classical empiricism in regarding the regularities initially observed not as facts in themselves, but as results of (generally) scientific experiments. Science is a movement, by way of theory, from phenomenon to structure.

Critical realists are thus concerned with ontological depths and identifying causally efficacious mechanisms. These mechanisms are seen as at least relatively enduring, and as such are given far more explanatory weight than within a constructionist ontology and epistemology (Reed, 2001). Critical realists argue for a shift from prediction to explanation, the use of abstraction, and reliance on interpretive forms of investigation. This is, of course, easier said than done, and many remain cautious about the development of methodologies able to explain validly without demonstrating or compensating for the lack of experimental control. As pointed out by Reed (2001), these problems are not, however, insurmountable if one does not "search for timeless and universal explanatory truths uncontaminated by the complexity of history, language, ideology and discourse".

Mechanisms are frequently occurring and recognisable causal patterns. They allow us to explain, but not to predict (Elster, 1998, p. 45). This can be compared to the

positivist view that theory does the work of prediction, or the interpretivist view that theory works at describing the conditions or the context for the production of meaningful experiences.

Critical realists recognise the reality of the natural world as well as the events and discourses of the social world According to Bhaskar (1989), we will only be able to understand – and so change – the social world if we identify the structures at work that generate those events and discourses. CR focuses on social reality as consisting of social structures that exist "independently of the various ways in which they can be discursively constructed and interpreted by social scientists and other social actors located in a wide range of sociohistorical situations" (Reed, 2001). In other words, CR distinguishes between a reality independent of what we think of it (the intransitive dimension) and our thinking of it (the transitive dimension). Indeed, to conflate these dimensions, to believe that "what we think is all what is", is, according to Bhaskar (1989), to commit the "epistemic fallacy".

CR thus assumes an ontological realism (there exists a mind-independent reality and truth is correspondent with fact) and defends the possibility of causal explanation, but also accepts the hermeneutic notion that knowledge is communicatively constructed, that our concepts and beliefs are historically generated and conditioned, and that the explanatory knowledge produced through realist analysis will always be open to challenge and subject to change on theoretical and empirical grounds. This epistemological relativism is combined with a judgmental rationality, which asserts that science is not arbitrary, and that there are rational criteria for judging some theories as better and more explanatory than others. Thus, scientific theorising is considered the best (although fallible) method for gaining knowledge of that mind-independent reality, even when it transcends the boundary of the observable (Niiniluoto, 1991; Boyd, 2002).

CR also involves an emancipatory dimension. Through an explanatory critique, i.e. by providing an account of the generative mechanisms that give rise to certain events and institutions, one is simultaneously engaged in a critique of their role in and influence on social action (Collier, 1998). Social science needs to do more than give a description of the world as seen by its members, it needs also to ask whether members have an adequate understanding of their world and, if not, to explain why not (Manicas, 1998).

*CR as social theory*

Bhaskar's work provides the foundations for a realist metatheory that is, in principle, compatible with a variety of social theories. However, because of its stratified view of social reality, it is not compatible with upward, downward or central conflationism. That is to say, people can not be reduced to society, nor society to people; social structures, cultural systems and human agents each possess their own emergent properties which have to be taken into account when anlaysing social phenomena. Archer (1995, 1996, 2000) has elaborated on this in her three central books on CR and social theory.

Critical realists are thus emphatic about the fallacy of collapsing the social and the individual level into each other, and adopt a social theory where the relative autonomy of the mediating processes (positioned practices) joining society and human agency over time is more pronounced than in the dialectically structured sociological model

Critical realism
as a philosophy
and social theory

15

("man creates society and society creates man") by Berger and Luckmann (1966), that has had a great influence on social theory. According to Bhaskar's (1979; explained, e.g. by Harvey, 2002) transformational model of social action, society does not directly create man any more than man directly creates society. An important assumption is that society can effectively socialise man if, and only if, a manifold of social relations is already in place. And although all social phenomena are dependant on human action, action requires structures. On the other hand, society is never the "unmediated transliteration of individual desire into structure, but human transformative power is always dependent on the facilities already in place" (Harvey, 2002, p. 168).

These mediating processes are put into a temporal framework by Archer's (1995, 1996, 2000) "Morphogenetic approach", which complements and develops Bhaskar's model. Here, focus is on change, and Archer provides an analytical framework in which the interrelationships between agency, structure and culture can be examined. Each system has its own relative autonomy with emergent powers that form constraints and opportunities for other systems. Archer shows how the fundamental tenets of realism, namely depth, stratification and emergence, can only be respected and reflected by a methodological realism which approaches structure and agency through "analytical dualism" which means that the structural, cultural and agential components are analysed separately, with a focus on their logical relations and the conditions and possibilities that these allow (Archer, 1995, Ch. 5). Society and culture are the products of human activity, and are constantly elaborated or reinforced by human activity. However, at any given time these social and cultural structures are pre-existent, which gives them their autonomy as possible objects of investigation. In this respect, CR differs from structuration theory, where agency and structure are regarded as ontologically and analytically inseparable, because the two are held to be so intimately intertwined that to accord each an ontological status of their own would be to reify them (Willmott, 1997). It also differs from the discourse analytical approach that maintains that it is only through the discourses and practices that social relations become represented (Reed, 2001).

A key aspect of the realistic project is, then, a concern with causality and the identification of causal mechanisms in social phenomena, in a manner quite unlike the traditional positivist search for causal generalisations. At the same time CR opposes the consequences of some hermeneutical traditions that stress that science has absolutely nothing to tell us about the social sciences.

**Realist social theory and LIS**
To use CR as an explanatory framework in the field of LIS research implies an argument for a realist social theory as a basis for the analysis of complex phenomena like information needs, seeking and use, as well as an argument for analytical dualism as a methodology for theorising the relative interplay of structure, culture and agency, a central issue in all social science research (Archer, 1996, Ch. 6). To keep these categories apart, for the purpose of analysis, is, according to Archer (1995, Ch. 5), a matter of theoretical necessity if we are to advance usable social theories.

A few central features of CR are used here to connect the philosophy and the realist social theory to some current LIS models of information behaviour. These features are the conception of a stratified social reality, an awareness of the importance of contextualisation, and the relation between structure and agency.

*A stratified reality*

The stratification of reality in the philosophical ontology of CR has two dimensions. The first is the earlier mentioned central distinction between the events that we can experience and describe, and the hidden, but nonetheless real, mechanisms behind them. The second dimension is that reality is assumed to consist of hierarchically ordered levels where a lower level creates the conditions for, but does not determine, the higher level. The distinction between the levels lies not in the entities, but in the generative mechanisms that operate at each level. It is not possible to reduce the causes of what occurs to one level to those of another level (whether lower or higher), because at each level something qualitatively new emerges (e.g. Harvey, 2002). These levels and their causes form an open, interactive world of things and contingent tendencies, which, according to CR, constitutes the proper object of scientific investigation.

From the view of information seeking and use, we can distinguish among individual, social and cultural levels, and indeed there are ample studies focusing on one or the other of these levels. To overemphasise one level is, however, to be reductive, flattening ontological depth. According to Willmott (1997), "to deny a stratified world is to deny the very possibility of social theory".

There have been several attempts to formulate integrative models of human information seeking. Hjørland (2000a) brings in the concept of a stratified ontology in claiming that a general theory of information-seeking behaviour must include an evolutionary theory of how organisms have adapted their cognitive apparatus in order to cope with their environment. He brings forth the activity theory founded by Leontyev as a psychological theory aiming at a realistic explanation that forces us to study information seeking behaviour not only on the psychological level, but also in the context of the "structure of production", that is, in the context of how information sources are organised and the societal functions of their organisation (Hjørland, 2000a). Activity theory agrees with critical realist theory in seeing individual psychological phenomena as something formed primarily in a cultural-historical process.

Bates (2002) offers another interesting model of information seeking and searching. Without any reference to realism or CR, her point lies in integrating the social and cultural levels of information seeking with the underlying biological and physical anthropological layers of human experience, thereby creating an awareness of a scientific perspective. Our understanding of information-seeking behaviours should, according to Bates, build on several layers: the chemical, physical and geological; the biological; the anthropological (physical and cultural); the social and historical; the cognitive/conative/affective (psychology); the aesthetic; the spiritual. The attention to a scientific perspective should not explain by reducing the social to the merely physical or psychological, but offer instead an alternative to the metatheory of information seeking focusing on socially and linguistically negotiated production of knowledge (see Tuominen *et al.*, 2002), and to the view that this metatheory should replace the classical information transfer model or the cognitive perspective.

These models of information-seeking behaviour, distinguishing between individual, social and cultural levels without reducing the one into the other, are consonant with the critical realist assumption of a stratified reality. Analysing a complex phenomenon such as information seeking implies an anti-reductive ontology, as neither biological, psychological, cognitive, nor social reductionism are consistent with interdisciplinary research.

Critical realism
as a philosophy
and social theory

17

*Information seeking in context*
Research on information seeking in context is a major trend in LIS research. A person is always situated in various contexts in his/her information-seeking behaviour, or rather his information actions (Kari and Savolainen, 2003). The context of information seeking and use has been studied and interpreted in many ways (Dervin, 1997). Talja *et al.* (1999) compare "objectified" and "interpretative" approaches to context, and define these as "the frames of reference that allow us to choose the relevant elements for study". In the former approach the objective of research is to study information behaviour in a setting where various kinds of contextual factors (e.g. discipline, organisation, work tasks, everyday life situation) are distinguished as "objective realities", while in the latter approach context itself creates meaning by sensemaking, influenced by shared linguistic practices (Talja *et al.*, 1999; Dervin, 1997).

The critical realist concept of a stratified ontology makes it possible to investigate analytically the relation between different levels of reality without collapsing the one into the other. The context of our action has structural and cultural conditions that affect us as individual human beings (Archer, 1995, Ch. 5). According to Bhaskar (1998, p. 414), "the circumstantial basis of action is a holdall, which includes structures not directly implicated in the action and the whole welter of material and social conditions and contingencies that comprise an agent's 'context'. It is the dynamic basis of action and the coincidence of competencies and facilities in human transformational agency". Underlying generative mechanisms are differently expressed empirically in different contexts, as powers (competences and facilities), opportunities, circumstances, and beliefs (theories and values).

As Talja *et al.* (1999) rightly point out, the "objectified" conception of context has enriched the LIS world with numerous models depicting the relation between one or another context and the person's or the group's information behaviour. Wilson (2000) summarises some of these interactions in his well-known and widely used "global" model of information behaviour (Wilson and Walsh, 1996). Here the context of information need, and the person-in-context leads to activating mechanisms that, through intervening variables trigger an information seeking behaviour. In a cyclic process the information-seeking behaviours lead to new information needs. The intervening variables can be of a psychological or demographic nature, they can be role-related, interpersonal or environmental. Niedźwiedzka (2003) comments on this model and its graphical representation, and suggests that the total chain of information behaviour should be immersed in the "context" and that the context is identified with the intervening variables (personal, role-related or environmental).

Another holistic contextual model is developed by Kari and Savolainen (2003) for the study of web searching, incorporating an orderly hierarchy of contextual layers, from the most concrete and fluid ones (the web and internet), through information sources, information seeking, information action, action in general, situations, and domains, to the most abstract, macroscopic and rigid level (life-worlds). The purpose of this model is to portray a person's entire information-seeking (in this case web-seeking) world and enable an analysis of the connection between information behaviour, or information action, and context, at different levels.

All the above-mentioned models of human information behaviour give a useful basis also for a CR-informed study of the information seeking behaviour, as long as attention is given to the effects of both observable and non-observable generative

mechanisms. As Kari and Savolainen (2003) point out, different methods can be used in studying different levels of context. CR advocates methodological pluralism, because the levels vary in regard to how mechanisms can best be analysed (Danermark, 2002), but rejects methodological relativism, that is, the view that no methods are more suitable than others. All methodological approaches should be designed for open systems, and all causality should be seen as non-predictable, as tendencies only.

The second approach to context, the "interpretative" approach (Talja *et al.*, 1999), focuses on the social level in communication and sense-making, and the definition of information is as meaning which can only be achieved through dialogue in a human community. The danger of such definitions of context is that they exclude both the structural constraints on the production of such meaning and the human limitations, both psychological and cognitive, that prevent the full accomplishment of this achievement (Mutch, 1999, 2002).

As mentioned before, CR embraces the hermeneutic production of meaning (Bhaskar, 1979, p. 153) and accepts the necessity of a hermeneutic phase of inquiry, but does not accept the view that the social world is exhausted by individual consciousnesses and language. When Archer (2000, p. 36) comments that we do not have the power to redefine our society's structural properties as our linguistic community pleases, she means that reality exists independent of our construction of knowledge through language. With its more general approach to social relations CR has, however, been criticised for largely ignoring semiosis, defined as the intersubjective production of meaning, Fairclough *et al.* (2002) argue that semiosis (discourse) is both meaningful and causally efficacious, and that critical realist concepts can be used to demonstrate how these effects are produced. The conclusion is that semiotic analysis, like critical discourse analysis, might benefit from paying more attention to concrete and complex analyses of extra-discursive domains, while CR might benefit from paying more attention to semiosis when exploring the social world (Fairclough *et al.*, 2002).

*The relation between agency and structure*
How should this connection between information actions and the context be studied? Bhaskar speaks of mediating concepts between structure and agency, the position-practice system, positions where individuals act. Agents have a point of contact with structure through the roles they occupy or assume, but also through their situation or context, which can be either problematic or felicitous. Structure has its own mechanisms and provides reasons for different courses of action to those who are differently positioned, but the structural conditioning of action is never mechanical, and indeed human intentionality is what demarcates agency from structure (Archer, 1995).

Archer (1995, 2000) argues for a nuanced view of human agency, and distinguishes between the person, the agent, and the actor. Persons are individual human beings emergent from (but not reducible to) their biological make-up, while agents are collective categories. Finally, there are the social actors, emergent from collective agents and enabled and constrained by their social role and the sociocultural situations in which they act. According to Archer, the personal identity must be distinguished from the social identity. Mutch (1999, p. 545) suggests that this stratified view of human agency might be useful in studying reactions to information, "allowing us to

Critical realism
as a philosophy
and social theory

19

isolate the constraints of individual psychology from the reactions of groups and the strivings of individual actors". All information behaviour, in relation to domains, work tasks or everyday life, is necessarily connected to each of these levels.

An awareness of the fact that social and cultural structures exist independent of our knowledge of them, has implications on how we regard and study many central problems in the field of LIS. When a person needs or seeks information, he or she does so from a certain position in a given cultural situation and within a given and pre-existent system of information sources and search opportunities. As Hjørland (2000a) points out, the user might not know about all the prevailing cultural, structural or institutional constraints, but these are nevertheless very real in affecting the search process. It is the task of the LIS researcher to explain the mechanisms that influence the information seeking, not only on an empirical level, by observing the user and his discourse community, but also by revealing possible underlying causes and relations.

Exactly the same applies in the study of relevance, another issue of great interest for information scientists (see, e.g. Hjørland, 2000b). The user's evaluation of relevance can not be calculated without paying attention to what cultural ideas, what social rules and relations that the user encounters as a person, an agent, and a social actor.

**Concluding remarks**
When it comes, then, to studying human information actions in context, it is important, according to CR theory, to distinguish, in the most categorical way, between human action and socio-cultural structure. The properties possessed by the social and cultural forms (the institutions, systems, work tasks and everyday life situations) that condition the information activities, may be very different from those possessed by the individuals (their reasons, intentions and plans) upon whose activity they depend.

What account of social reality would rule out a realist programme of the kind outlined above? According to Outhwaite (1998, p. 282), realism will, broadly speaking, be inapplicable if there are no intransitive objects of social science, no objects susceptible of real definition and nothing capable of being explained in terms of generative mechanisms. This means that social realism is compatible with a wide range of social theories, but, more formally, "critical realism is committed to an explanatory framework which acknowledges and incorporates (a) *pre-existent structures* as generative mechanisms, (b) their *interplay* with other objects possessing causal powers and liabilities proper to them in what is a stratified social world, and (c) nonpredictable but none the less explicable *outcomes* arising from interactions between the above, which take place in the open system that is society" (Archer, 1998, p. 377).

Could CR act as an underpinning philosophy or a philosophical "underlabourer" (Archer, 1998, p. 197) for LIS research, or will it only add to the "laundry list" of concepts and theories (Dervin, 2003)? Although much of the writing, expecially by Bhaskar, on CR philosophy is difficult and sometimes obscure, Danermark (2002), with examples from disability research, finds that the CR perspective lays the foundation for interdisciplinary research in a very fruitful way, not least in its demand for methodological pluralism. He also argues for the fruitfulness of highlighting the (often tacit) assumptions each researcher by necessity has about reality. These considerations should apply to LIS as well, as should Danermark's observation that interdisciplinary fields are often characterised by a complex relation, or even a gap

between the knowledge bases of professional practitioners and researchers. While the LIS practitioner tends to adopt a "practitioner focussed philosophy" (Dobson, 2002) and to see the information behaviour of the information seeker as whole, including both social and individual aspects, the researcher often has to separate different levels in order to analyse a complex problem. An awareness of a stratified reality and generative mechanisms working in an open system might facilitate a common ground, where the outcome of information behaviour research is seen as a basis for practical knowledge, not prediction.

## References

Archer, M.S. (1995), *Realist Social Theory: The Morphogenetic Approach*, Cambridge University Press, Cambridge.

Archer, M.S. (1996), *Culture and Agency. The Place of Culture in Social Theory*, Cambridge University Press, Cambridge.

Archer, M.S. (1998), "Introduction: realism in the social sciences", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. 189-205.

Archer, M.S. (2000), *Being Human. The Problem of Agency*, Cambridge University Press, Cambridge.

Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds) (1998), *Critical Realism: Essential Readings*, Routledge, London.

Bates, M. (2002), "Toward an integrated model of information seeking and searching", *The New Review of Information Behaviour Research*, Vol. 3, pp. 1-15.

Berger, P. and Luckmann, T. (1966), *The Social Construction of Reality: A Treatise: It's the Sociology of Knowledge*, Achor Books, New York., NY.

Bhaskar, R. (1978), *A Realist Theory of Science*, Harvester, Hassocks.

Bhaskar, R. (1979), *The Possibility of Naturalism*, Harvester Press, Hassocks.

Bhaskar, R. (1989), *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*, Verso, London.

Bhaskar, R. (1998), "Facts and values: theory and practice", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. 409-43.

Bhaskar, R. and Lawson, T. (1998), "General introduction", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. ix-xxiv.

Boyd, R. (2002), "Scientific realism", in Zalta, E.N. (Ed.), *The Stanford Encyclopedia of Philosophy*, available at: < http://plato.stanford.edu/archives/sum2002/entries/scientific-realism/ >

Budd, J.M. (2001), *Knowledge and Knowing in Library and Information Science: A Philosophical Framework*, Scarecrow Press, Lanham, MD.

Collier, A. (1994), *Critical Realism: An Introduction to the Philosophy of Roy Bhaskar*, Verso, London.

Collier, A. (1998), "Explanation and emancipation", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. 444-72.

Danermark, B. (2002), "Interdisciplinary research and critical realism: the example of disability research", *Journal of Critical Realism (Incorporationg Alethic)*, Vol. 5 No. 1, pp. 56-64.

Dervin, B. (1997), "Given a context by any other name: methodological tools for taming the unruly beast", in Vakkare, P., Savolainen, R. and Dervin, B. (Eds), *Information Seeking in Context: Proceedings of an International Conference on Information Needs, Seeking and Use in Different Contexts*, Tampere Taylor Graham, London, pp. 13-38).

Dervin, B. (2003), "Human studies and user studies: a call for methodological interdisciplinarity", *Information Research*, Vol. 9 No. 1, paper 166, available at: http://InformationR.net/ir/9-1/paper166.html

Dobson, P.J. (2002), "Critical realism and information systems research: why bother with philosophy?", *Information Research*, Vol. 7 No. 2, paper 124, available at: http://InformationR.net/ir/7-2/paper124.html.

Elster, J. (1998), "A plea for mechanisms", in Hedstrøm, P. and Swedberg, R. (Eds), *Social Mechanisms: An Analytical Approach to Social Theory*, Cambridge University Press, Cambridge, pp. 45-73.

Fairclough, N., Jessop, B. and Sayer, A. (2002), *Critical Realism and Semiosis*, Department of Sociology, Lancaster University, Lancaster, available at: www.comp.lancs.au.dk/sociology/soc111rj.htm (accessed 13 November).

Harvey, D.L. (2002), "Agency and community: a critical realist paradigm", *Journal for the Theory of Social Behaviour*, Vol. 32 No. 2, pp. 163-94.

Hjørland, B. (2000a), "Information seeking behaviour: what should a general theory look like?", *The New Review of Information Behaviour Research*, Vol. 1, pp. 19-33.

Hjørland, B. (2000b), "Relevance research: the missing perspective(s): 'non-relevance' and 'epistemological relevance'", *Journal of the American Society for Information Science*, Vol. 51 No. 2, pp. 209-11.

Hjørland, B. (2004), "Arguments for philosophical realism in library and information science", *Library Trends*, Vol. 52 No. 3, pp. 488-506.

Kari, J. and Savolainen, R. (2003), "Towards a contextual model of information seeking on the web", *The New Review of Information Behaviour Research*, Vol. 4, pp. 155-75.

Klein, H.K. (2004), "Seeking the new and the critical in critical realism: *déjà vu?*", *Information and Organization*, Vol. 14 No. 2, pp. 123-44.

Layder, D. (1994), *Understanding Social Theory*, Macmillan, London.

Manicas, P. (1998), "A realist social science", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. 313-38.

Mingers, J. (2004), "Realizing information systems: critical realism as an underpinning philosophy for information systems", *Information and Organization*, Vol. 14, pp. 87-103.

Mutch, A. (1999), "Information: a critical realist approach", in Wilson, T.E. and Allen, D.K. (Eds), *Exploring the Context of Information Behaviour*, ISIC-98, Taylor Graham, London, pp. 535-51.

Mutch, A. (2002), "Actors and networks or agents and structures: towards a realist view of information systems", *Organization*, Vol. 9 No. 3, pp. 477-96.

Niedź wiedzka, B. (2003), "A proposed general model of information behaviour", *Information Research*, Vol. 9 No. 1, paper 164, available at: http://InformationR.net/ir/9-1/paper164.html (accessed October).

Niiniluoto, I. (1991), "Realism, scientfic", in Burkhardt, H. and Smith, B. (Eds), *Handbook of Metaphysics and Ontology*, Vol. 2, Philosophia Verlag, Munich, pp. 761-3.

Outhwaite, W. (1998), "Realism and social science", in Archer, M.S., Bhaskar, R., Collier, A., Lawson, T. and Norrie, A. (Eds), *Critical Realism: Essential Readings*, Routledge, London, pp. 282-96.

Reed, M.I. (2001), "Organization, trust and control: a realist analysis", *Organization Studies*, Vol. 22 No. 2, pp. 201-28.

Sayer, A. (1992), *Method in Social Science: A Realist Approach*, 2nd ed., Routledge, London.

Sayer, A. (1999), *Realism and Social Science*, Sage, London.

Spasser, M.A. (2002), "Realist activity theory for digital library evaluation: conceptual framework and case study", *Computer Supported Cooperative Work*, Vol. 11 No. 1/2, available at: www.ics.uci.edu/~redmiles/activity/final-issue/Spasser/Spasser.doc.

Talja, S., Keso, H. and Pietiläinen, T. (1999), "The production of 'context' in information seeking research: a metatheoretical view", *Information Processing and Management*, Vol. 35 No. 6, pp. 751-63.

Tuominen, K., Talja, S. and Savolainen, R. (2002), "Discourse, cognition, and reality: toward a social constructionist metatheory for library and information science", in Bruce, H., Fidel, R., Ingwersen, P. and Vakkari, P. (Eds), *Emerging Frameworks and Methods: Proceedings of the 4th International Conference on Conceptions of Library and Information Science (CoLIS 4)*, Libraries Unlimited, Greenwich, CT, pp. 271-83.

Willmott, R. (1997), "Structure, culture and agency: rejecting the current orthodoxy of organisation theory", *Journal for the Theory of Social Behaviour*, Vol. 27 No. 1, pp. 93-123.

Wilson, T.D. (2000), "Human information behaviour", *Informing Science*, Vol. 3 No. 2, special issue on Information Science Research, available at: http://inform.nu/Articles/Vol3/v3n2p49-56.pdf (accessed 5 June 2004).

Wilson, T.D. (2002), "Philosophical foundations and research relevance: issues for information research", paper presented at CoLIS4 – 4th International Conference on Conceptions of Library and Information Science: Emerging Framework and Method, University of Washington, Seattle, WA, 21-25 July, available at: http://informationr.net/tdw/publ/papers/COLIS4.html (accessed 5 June 2004).

Wilson, T.D. and Walsh, C. (1996), *Information Behaviour: and Interdisciplinary Perspective*, A report to the British Library Research and Innovation Centre, British Library Research and Innovation Centre, London, available at: http://informationr.net/tdw/publ/infbehav/prelims.html (accessed 5 June 2004).