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## **Realism as a Stance for Mixed Methods Research**

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Philosophical realism, a currently prominent approach in the philosophy of science, is gaining increased attention as an alternative to both positivism/empiricism and constructivism as a stance for research and evaluation in the social sciences (Campbell, 1988; House, 1991; Mark, Henry, & Julnes, 2000; Maxwell, 1990, 1992, 2004a, 2008; Pawson, 2006; Pawson & Tilley, 1997; Sayer, 1992, 2000). Contemporary versions of realism have presented sophisticated approaches to some of the contentious philosophical issues involved in the “paradigm wars” over qualitative and quantitative research.

Although there are now a considerable number of substantive mixed method studies that have employed a realist perspective, realism has received relatively little notice in discussions of mixed methodology (exceptions include Greene, 2007; Greene & Hall, this volume; Lipscomb, 2008; and McEvoy & Richards, 2006). We argue that, as a philosophical perspective that validates and supports key aspects of both qualitative and quantitative approaches while identifying some specific limitations of each, realism can constitute a productive stance for mixed method research, and can facilitate a more effective collaboration between qualitative and quantitative researchers.

There are many diverse versions of realism across the philosophical landscape, but a common feature of the realist positions that we discuss here is an integration of a realist ontology (there is a real world that exists independently of our perceptions, theories, and constructions) with a constructivist epistemology (our *understanding* of this world is inevitably a construction from our own perspectives and standpoint, and there is no possibility of attaining a “God’s eye point of view” that is independent of any

particular viewpoint). In addition, these versions of realism acknowledge the reality of mental phenomena and the value of an "interpretive" perspective for studying these (Putnam, 1990, 1999; Sayer, 1992, 2000).

Different terms have been used for such versions of realism, including "critical" realism (Bhaskar, 1989; Archer, Bhaskar, Collier, Lawson, & Norrie 1998), "experiential" realism (Lakoff, 1987), "subtle" realism (Hammersley, 1992), "emergent" realism (Henry, Julnes, & Mark, 1998; Mark, Henry, & Julnes, 2000), "natural" realism (Putnam, 1999), "innocent" realism (Haack, 1998, 2003), and "agential" realism (Barad, 2007). We will use the term "critical realism" in a broad sense to include all of these versions of realism. (We provide a more detailed description of realism later in this chapter.)

There is a widespread view within mixed method research that the appropriate philosophical "partner" for qualitative research is constructivism, and that for quantitative research is postpositivist empiricism (Johnson & Gray, this volume). This view would seem to make mixed method research a philosophical oxymoron, or at least a problematic union. Postpositivism and constructivism disagree on major issues concerning the nature of the objects of research and our knowledge of these (Guba & Lincoln, 1989), and these disagreements played a major role in what have been called the "paradigm wars" between qualitative and quantitative approaches.

In response, methodological pragmatists (e.g., Patton, 2001; Reichardt & Cook, 1979; Tashakkori & Teddlie, 1998) have claimed that these philosophical disagreements are not fundamental, and that research methods are not intrinsically linked to specific philosophical positions. They have argued that methods can be combined on the basis of their practical utility, and that paradigmatic conflicts can be ignored. This view has gained substantial acceptance within the mixed method research community, and pragmatism has been promoted as the appropriate philosophical stance for mixed method research (Biesta, this volume; Johnson & Gray, this volume; Maxcy, 2003; Morgan, this volume; Tashakkori & Teddlie, 2003).

We agree with pragmatists that research practices are not determined by, or dependent on, philosophical paradigms. A research strategy or method is not necessarily linked to a single philosophical stance, and any approach may be informed by one or more of a number of paradigms (Greene, 2002; Pitman & Maxwell, 1992). However, we believe that the pragmatist position underestimates the actual *influence* of philosophical assumptions on research methods, an influence that is particularly significant for combining qualitative and quantitative approaches. Ontological, epistemological, and axiological assumptions are real properties of researchers and evaluators, part of what Henry, Julnes, and Mark (1998; Mark, Henry, & Julnes, 2000) call "values." These assumptions inevitably

influence researchers' purposes and actions to some degree, and are often implicit and not easily abandoned or changed.

For example, mainstream quantitative research has traditionally presupposed a Humean, regularity view of causation (Mohr, 1996; cf. Johnson & Gray, this volume), although this is rarely explicit. This philosophical assumption leads to, and supports, a variable-oriented approach to research, an emphasis on replicability and general laws, and a validity strategy based on experimental or statistical controls. These characteristics, and the philosophical position that informs them, *inherently* relegate qualitative research to a secondary role in investigating causality. This restricts the range of questions for which qualitative methods are seen as appropriate, and makes mixed method research both more difficult and less productive (Maxwell, 2004a). On the other hand, qualitative researchers who accept a "strong" constructivist philosophy reject quantitative researchers' characteristic assumption that objective, verifiable knowledge about the world is possible (Schwandt, 1997, p. 20), and the view of the world as analyzable in terms of causes (Guba & Lincoln, 1989). This prevents these qualitative researchers from accepting (let alone using) some central features of quantitative design, data collection, and analysis.

Urging researchers to simply set aside these assumptions is not just unrealistic, but counterproductive. Paradigmatic assumptions function not simply as constraints on methods, but as lenses for viewing the world, revealing phenomena and generating insights that would be difficult to obtain with other lenses. This idea is at the heart of Greene's (2007, pp. 79-80; Greene & Hall, this volume) "dialectic" stance for doing mixed method research, in which the goal is to create a dialogue between diverse perspectives on the phenomena being studied, so as to deepen, rather than simply broaden or triangulate, the understanding gained. Greene considers it the most valuable stance for mixed method research, because the juxtaposition of different lenses or "mental models" that it requires is the most likely to produce generative insights and depth of understanding, and also because it promotes a meaningful engagement with difference and a dialogue across paradigm boundaries.

In this chapter, we argue that realism—in particular, what we call "critical realism"—can contribute to such a dialogue, and can help resolve some of the problems created by other perspectives. Realism provides a philosophical stance that is compatible with the essential methodological characteristics of *both* qualitative and quantitative research, and can facilitate communication and cooperation between the two (Mark, Henry, & Julnes, 2000; Greene, 2002). However, we also argue that realism has some specific implications that challenge certain practices in both qualitative and

quantitative research, and that point to new ways of addressing some important issues in mixed method research.

We are not arguing for realism as an “alternate paradigm” (Greene, 2007, pp. 82-86) that is the preferred stance for mixed method research. In fact, we are skeptical of the entire concept of unified “paradigms” in research, a concept that has dominated the discussion of the relationship between philosophical assumptions and research methods. So before we discuss what we see as the potential contributions of a realist perspective, we want to address the larger issue of paradigms in mixed method research.

### **Paradigms in mixed method research**

The main argument for combining qualitative and quantitative paradigmatic positions, as well as methods, in mixed method research has traditionally been their complementarity—that they have different strengths and limitations, and that using them together allows the researcher to draw conclusions that would not be possible using either method alone. However, this argument has usually assumed that the quantitative and qualitative traditions embody different “paradigms”—ontological, epistemological, and value assumptions, as well as methodological differences—that are, even if compatible, distinctly different from one another, and that these differences are straightforward and easily categorized. Most textbooks or other general presentations of mixed method research list the relative strengths and limitations of qualitative and quantitative research, and use these to develop strategies for combining the two. These lists of strengths are typically dichotomous, and the characteristics of each approach are presented as uniform, polar, and complementary.

This dichotomous and polar view of the two approaches has been challenged by Hammersley (1992) and Howe (2003), and more recently by Bergman (2008b), Biesta (this volume), Hammersley (2008), and Fielding (2008), who argue for a more complex and contextualized understanding of the potential contributions of each approach. Many of the contributors to the volume edited by Bergman (2008a) have serious reservations about the way mixed method research has been conceptualized, and see the qualitative/quantitative distinction as much more problematic than has traditionally been assumed. Bergman claims that the assumption of generic “strengths” of each approach, based on paradigm differences, is fallacious, and that the conventional divide between qualitative and quantitative methods is to a considerable degree related to “delineating and preserving identities and ideologies rather than to describe possibilities and limits of a

rather heterogeneous group of data collection and analysis techniques" (p. 29).

In addition to the critiques by Bergman, Hammersley, and others of the view that paradigms constitute a set of logically consistent assumptions that have necessary connections to methods, the view that paradigms are generally shared by members of a community of researchers is problematic. While prominent advocates of this view (e.g., Denzin & Lincoln, 2005) now concede that qualitative researchers don't all share the same epistemological assumptions, they still assume, or at least write as if, qualitative researchers can be divided into distinct "camps" or "moments," including postpositivist, constructivist, and postmodern, that do share a particular paradigm.

This view is supported by the assumption that all communities are united by shared beliefs, values, and practices, a theory exemplified in the anthropological concept of "culture." However, this assumption has frequently been challenged in anthropology by authors who argued that it denies or ignores the existence of substantial intra-cultural diversity in communities, and misrepresents the actual processes that generate and maintain social solidarity (Wallace, 1970; Hannerz, 1992; Maxwell, 1999). It has also been challenged by postmodern scholars, who generally consider diversity—within individual identities, as well as within social communities—to be fundamental rather than superficial (e.g., Bernstein, 1992; Rosenau, 1992). Studies have demonstrated substantial, and often unrecognized, diversity in the supposedly "paradigmatic" assumptions held by linguists (McCawley, 1982) and qualitative evaluators (Pitman & Maxwell, 1992). This issue will be addressed in more general terms below, in considering the importance of diversity as a real phenomenon.

A perspective that makes little mention of postmodernism (and is critical of specific aspects of postmodern theory when it does so), but that is strikingly compatible with postmodernism's overall insistence on the pervasive significance of diversity, as well as with a "dialectic" stance for mixed method research, has been presented by Abbott (2001, 2004). Abbott argued that ontological and epistemological positions, rather than being unified, foundational sets of premises that strongly shape the practices of particular communities of scholars, function instead as heuristics, conceptual tools that are used to solve specific problems in theory and research. He stated that if we take any of a large number of debates between polar positions, such as positivism vs. interpretivism, analysis vs. narrative, realism vs. constructivism, and so on, we find that these issues can play out at many different levels, even within communities of scholars that have adopted one or the other of these positions as characterizing their field at a broader level. Thus, within the community of sociologists of science, which is

generally seen as constructivist in orientation, there are internal debates that can be seen as involving realist vs. constructivist assumptions, and the debates often employ both realist and constructivist theoretical “moves” by particular scholars within that community.

One of the many examples that Abbott analyzed was Chambliss’s study of competitive swimming (Chambliss, 1989; see Example 1). Abbott argued that the debate over Chambliss’s work shows the power of making a “realist” or “constructivist” move, even within a largely constructivist field, creating new leads for research. He stated that “the idea of heuristics is to open up new topics, to find new things. To do that, sometimes we need to invoke constructivism, as have the students of occupational prestige. Sometimes we need a little realism” (Abbott, 2004, p. 191). This position is quite compatible with Hacking’s (1999) detailed and incisive analysis of constructivism, uncovering the ways in which particular phenomena (mental illness, child abuse, nuclear weapons, rocks) can be usefully seen as both “real” and “social constructs.”

#### Example 1 [box]

On the basis of five years of ethnographic research, including coaching swimming teams at different levels and observing and interviewing swimmers, Chambliss argued that there is no such thing as “talent” as an explanation of high performance; it is a myth that romanticizes and mystifies what he called “the mundanity of excellence.” He supported this claim with detailed evidence from his observations and interviews, showing that high performance is simply the result of dozens of specific skills, learned or stumbled upon, that are repeatedly practiced and synthesized into a coherent whole. Abbott saw this as a constructivist move in the debate over sports performance; it asserted that “talent” is a social construction that does not refer to any real causal factor, but is simply a vacuous “explanation” for high performance.

This move was consistent with the field of sociology of sport, which was generally seen as constructionist in orientation. However, underlying Chambliss’s argument for a constructivist interpretation of “talent” was a realist move, identifying actual skills and practices, and “excellence” as the outcome of these, as real phenomena rather than simply constructions. As a result, his work was attacked by others in this field for not treating “winning,” and the skills that led to this, as themselves social constructions. Chambliss’s reply was that while selecting winners on the basis of elapsed times, rather than the beauty or precision of their strokes, was certainly a social construction, once that construction was made, the factors that lead to

success in terms of that standard, and the outcomes of races, have a real existence independent of how they are construed by participants and judges.

From this perspective, epistemological positions look less like the traditional view of "paradigms", and more like tools in a toolkit. "Logical consistency" is the wrong standard to apply to a toolkit. You don't care if the tools are all "consistent" with some axiomatic principle; you care if, among them, they enable you to do the job, to create something that can meet your needs or accomplish your goals. In the same way, consistency is the wrong standard to apply to an individual's or a community's ontological and epistemological views. These views, seen as heuristics, are resources for getting your work done. This approach is similar to Greene's "dialectic" stance, but puts more emphasis on the dialectic use of discrete conceptual tools, rather than "paradigms" in a more global sense.

The rest of this paper explores some of the specific uses of realist conceptual tools in social research. First, however, we need to describe realism in more detail as a general approach in both the natural and social sciences.

### **What is realism?**

In the philosophy of science, including the philosophy of the social sciences, realism has been an important, if not the dominant, approach for over 30 years (Baert, 1998, pp. 189-190); realism has been a prominent position in other areas of philosophy as well (Kulp, 1997). The proliferation of realist positions has led one realist philosopher to claim that "scientific realism is a majority position whose advocates are so divided as to appear a minority" (Leplin, 1984, p. 1). The idea that there is a real world with which we interact, and to which our concepts and theories refer, has proved to be a resilient and powerful one that has attracted increased philosophical attention following the demise of positivism.

Philosophic realism in general is defined by Phillips (1987:205) as "the view that entities exist independently of being perceived, or independently of our theories about them." More specifically, Lakoff lists the following characteristics of what he terms "experiential realism":

- (a) a commitment to the existence of a real world, (b) a recognition that reality places constraints on concepts, (c) a conception of truth

that goes beyond mere internal coherence, and (d) a commitment to the existence of stable knowledge of the world. (1987:xv)

In the social sciences, the most important manifestation of realism is the "critical realist" tradition most closely associated with the work of Bhaskar (1978, 1989) and others in this tradition (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998). However, we also draw substantially from other versions of realism that we see as compatible with the key ideas of this tradition, in particular those of the philosophers Haack (1998, 2003), Manicas (2006), and Putnam (1990, 1999), the physicist and historian of science Barad (2007), the linguist Lakoff (1987; Lakoff & Johnson, 1999), and the evaluation researchers Pawson and Tilley (1997).

The distinctive feature of these forms of realism is that they deny that we have any objective or certain knowledge of the world, and accept the possibility of alternative valid accounts of any phenomenon. All theories about the world are grounded in a particular perspective and world view, and all knowledge is partial, incomplete, and fallible. Lakoff states this distinction between "objectivist" and "realist" views as follows:

Scientific objectivism claims that there is only one fully correct way in which reality can be divided up into objects, properties, and relations. . . . Scientific realism, on the other hand, assumes that "the world is the way it is," while acknowledging that there can be more than one scientifically correct way of understanding reality in terms of conceptual schemes with different objects and categories of objects. (1987, p. 265)

In taking this position, critical realism retains an ontological realism while accepting a form of epistemological relativism or constructivism. This position has achieved widespread, if often implicit, acceptance as an alternative both to naïve realism and to radical constructivist views that deny the existence of any reality apart from our constructions. Shadish, Cook, and Campbell (2002) argued that "all scientists are epistemological constructivists and relativists" in the sense that they believe that *both* the ontological world and the worlds of ideology, values, and so forth play a role in the construction of scientific knowledge (p. 29). Conversely, Schwandt (1997) stated that

many (if not most, I suspect) qualitative researchers have a common-sense realist *ontology*, that is, they take seriously the existence of things, events, structures, people, meanings, and so forth in the environment as independent in some way from their experience with them. (p. 134)



Schwandt also noted that most social constructivists in the sociology of science “do not conclude that there is no material reality ‘out there’” (Schwandt, 1997, p. 20; see also Shadish, Cook, & Campbell, 2002, pp. 28-31). Ezzy (2002, pp. 15-18) argued similarly that while some postmodernists deny that reality exists, others simply want to problematize our assumptions about reality in light of the complexity of our process of understanding it. He cites Kvale’s claim that while moderate postmodernism rejects the idea of universal truth, it “accepts the possibility of specific, local, personal, and community forms of truth with a focus on daily life and local narrative” (1995, p. 21).

### Example 2 [box]

A particularly detailed and sophisticated statement of the sort of realism we adopt here was presented by the physicist and historian of science Evelyn Fox Keller (1992), with the assumption that this viewpoint is so widely shared that it needs no explicit defense. She stated, “I begin with a few philosophical platitudes about the nature of scientific knowledge upon which I *think* we can agree, but which, in any case, will serve to define my own point of departure” (p. 73):

Scientific theories neither mirror nor correspond to reality.

Like all theories, they are models, in Geertz’s (1973) terms, both models of and models for, but especially, they are models *for*; scientific theories represent in order to intervene, if only in search of confirmation. And the world in which they aim to intervene is, first and foremost, the world of material (that is, physical) reality. For this reason, I prefer to call them tools. From the first experiment to the latest technology, they facilitate our actions in and on that world, enabling us not to mirror, but to bump against, to perturb, to transform that material reality. In this sense scientific theories are tools for changing the world.

Such theories, or stories, are invented, crafted, or constructed by human subjects, interacting both with other human subjects and with nonhuman subjects/objects.

But even granted that they are constructed, and even abandoning the hope for a one-to-one correspondence with the real, the effectiveness of these tools in changing the world has something to do with the relation between theory and reality. To the extent that scientific theories do in fact “work”—that is, lead to action on things and people

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that, in extreme cases (for example, nuclear weaponry), appear to be independent of any belief system—they must be said to possess a kind of “adequacy” in relation to a world that is not itself constituted symbolically—a world we might designate as “residual reality.”

I take this world of “residual reality” to be vastly larger than any possible representation we might construct. Accordingly, different perspective, different languages will lead to theories that not only attach to the real in different ways (that is, carve the world at different joints), but they will attach to different parts of the real—and perhaps even differently to the same parts (pp. 73-74).

Such versions of realism share many characteristics with philosophical pragmatism. It is worth noting, therefore, that some of the major figures in pragmatism were also ontological realists (Maxcy, 2003, p. 56; Biesta, this volume). Buchler (1940) said of Peirce, the founder of American pragmatism, that

Underlying every phase of Peirce’s thought is his realism. The supposition that there are real things—the real is ‘that whose characters are independent of what anybody may think them to be’—he regards as the ‘fundamental hypothesis’ of science, for it alone explains the manner in which minds are compelled to agreement. (p. xiv).

Contemporary philosophers who integrate pragmatism and realism include Haack (2006) and Putnam (1990; Conant & Zeglen, 2002); Putnam once commented that he should have called his version of realism “pragmatic realism.”

Despite the widespread commonsense acceptance of combining ontological realism and epistemological constructivism, the application of this perspective to qualitative research, as advocated by Hammersley (1992) and Maxwell (1992), was challenged by Smith and Deemer (2000), who asserted that the ontological concept of a reality independent of our theories can serve no useful function, since there is no way to employ this that will avoid the constraints of a relativist epistemology. They concluded that “Maxwell is unable to show us how to get reality to do some serious work” (p. 883). In what follows, therefore, we attempt to show how a realist ontology *can* do useful work in the methodology and practice of mixed method research, if it is taken seriously and its implications systematically developed. We do so by describing some specific implications of critical realism for quantitative,

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qualitative, and mixed method research, showing how a realist perspective can provide new and useful ways of approaching problems and important insights into social phenomena.

Given the prominence of realist views in philosophy, it is puzzling that realism has not had a greater influence on research methodology. Despite the contributions to a realist approach to social research by Campbell (1988), Huberman & Miles (1985), Sayer (1992, 2000), Hammersley (1992), House (1991), and others, philosophic realism seems still to be largely unnoticed by most researchers (one exception is the field of program evaluation, where realist approaches developed by Pawson and Tilley (1997) and Henry, Julnes, and Mark (1998; Mark, Henry, & Julnes, 2000) have had a significant impact). Even when realism is noticed, it tends to be seen by quantitative researchers as a commonsense truism with no important implications, and dismissed by qualitative researchers as simply positivism in another guise (Mark, Henry, & Julnes, 2000, p. 166).

However, realism is strikingly different from positivism in many of its premises and implications (Baert, 1998, pp. 192-193). One of the most significant of these is the realist understanding of causality. Realists have been among the strongest critics of the "regularity" view of causation that was typical of positivism and is still dominant in quantitative research (Maxwell, 2004a). In addition, most critical realists accept the reality of mental states and attributes, and the importance of these for causal explanation in the social sciences, positions rejected by both traditional positivism and constructivism. Both of these aspects of realism are discussed in more detail below, and constitute two areas in which critical realism can make an important contribution to mixed method research.

Although some realists have been critical of quantitative and experimental research (e.g., Sayer, 1992; Pawson & Tilley, 1997), we believe that realism is a productive stance for both quantitative and qualitative research (cf. Mark, Henry, & Julnes, 2000). Donald Campbell, a major figure in the development of experimental methods in social research and an important influence on quantitative methodology in general, was an explicit critical realist in the broad sense we use here (Campbell, 1988; cf. Maxwell & Lincoln, 1990), and his realist perspective was acknowledged by Weisner (2005, p. 6) as an influence on the mixed method studies he was involved in.

Realism is also compatible with some of the assumptions and implications of constructivism and postmodernism, including the idea that difference is fundamental rather than superficial, a skepticism toward "general laws", an antifoundationalist stance, and a relativist epistemology

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(Maxwell, 1995, 1999). It differs from these approaches primarily in its realist ontology—a commitment to the existence of a real, though not an “objectively” knowable, world—and its emphasis on causal explanation (although a fundamentally different concept of causal explanation than that of the positivists) as intrinsic to social science.

Such an ecumenical approach is so characteristic of realism that Baert (1998, p. 194) accuses realists of ruling out almost nothing but extreme positivism. It is true that realism is pragmatic in that it does not discard *a priori* those approaches that have shown some ability to increase our understanding of the world. However, the value of realism does not derive simply from its compatibility with different approaches to research, or from its pragmatic orientation to methods. Realism has important implications for the conduct of research. In the remainder of this paper, therefore, we want to take seriously a realist ontology, and to outline some of its most important implications for mixed-method research.

### **Potential contributions of realism to mixed method research**

There are many aspects of mixed method research for which realism provides a valuable perspective. For example, it is useful to view research designs as real entities--not simply as models *for* research, but also as the actual conceptualizations and practices employed in a specific study. The latter approach helps a reader of a research publication to understand the *real* design of a study, its “logic-in-use,” which may differ substantially from its “reconstructed logic” (Kaplan, 1964, p. 8) presented in publications (Maxwell & Loomis, 2003; Maxwell, 2005). This conception of design as a model of, as well as for, research is exemplified in a classic qualitative study of medical students (Becker, Geer, Hughes, & Strauss, 1961; see example 3).

#### Example 3 [box]

Becker et al. (1961) begin their chapter on the "Design of the Study" by stating that

In one sense, our study had no design. That is, we had no well-worked-out set of hypotheses to be tested, no data-gathering instruments purposely designed to secure information relevant to these hypotheses, no set of analytic procedures specified in advance.

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Insofar as the term "design" implies these features of elaborate prior planning, our study had none.

If we take the idea of design in a larger and looser sense, using it to identify those elements of order, system, and consistency our procedures did exhibit, our study had a design. We can say what this was by describing our original view of the problem, our theoretical and methodological commitments, and the way these affected our research and were affected by it as we proceeded. (1961, p. 17)

A second example of the application of a realist perspective to research design is to view the relationships that a researcher establishes with participants and other stakeholders in a study as a real component of the "design-in-use" of a study, one that is rarely addressed in discussions of research design and that often is critical to the actual functioning of a study (Maxwell, 2002, 2005).

In what follows, we focus on four issues for which we feel realism can make a particularly important contribution to mixed method research: causal explanation, mind and reality, validity, and diversity.

### 1. *A process approach to causality*

For most of the twentieth century, the dominant conception of causality in the philosophy of science was based on David Hume's analysis, generally known as the "regularity" theory of causation (Salmon, 1989; House, 1991). Hume argued that we can't directly perceive causal relationships, only the observed regularities in associations of events, and rejected any reference to hypothesized or inferred entities and mechanisms. This view treats the actual process of causality as unobservable, a "black box," and focuses simply on discovering whether there is a systematic relationship between inputs and outputs. This conception of causality is "the basis of ordinary quantitative research and of the stricture that we need comparison in order to establish causality" (Mohr, 1996, p. 99).

In quantitative research, the regularity theory of causation is intrinsic to an approach to explanation that Mohr (1982) called "variance theory." Variance theory deals with variables and the correlations among them; it is based on an analysis of the contribution of differences in measured values of particular variables to differences in values of other variables. The comparison of conditions or groups in which the presumed causal factor takes different values, while other factors are held constant or statistically controlled, is central to this approach to causation. Thus, variance theory

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tends to be associated with research that employs experimental or correlational designs, quantitative measurement, and statistical analysis. As Mohr noted, "the variance-theory model of explanation in social science has a close affinity to statistics. The archetypal rendering of this idea of causality is the linear or nonlinear regression model" (1982, p. 42).

In philosophy, the most widely accepted alternative to the regularity approach to causality is a realist approach that sees causality as fundamentally referring to the actual causal mechanisms and processes that are involved in particular events and situations. For the philosophy of science in general, this approach was most systematically developed by Salmon (1984; 1989; 1998), who referred to it as the "causal/mechanical" view. This approach

makes explanatory knowledge into knowledge of the . . . mechanisms by which nature works. . . . It exhibits the ways in which the things we want to explain come about. (Salmon, 1989, p. 182-183)

For the social sciences, this approach to explanation closely resembles what Mohr (1982) called "process theory." Process theory deals with *events* and the processes that connect them; it is based on an analysis of the causal *processes* by which some events influence others. It is fundamentally different from variance theory as a way of thinking about scientific explanation. Sayer (1992) argued that

much that has been written on methods of explanation assumes that causation is a matter of regularities in relationships between events, and that without models of regularities we are left with allegedly inferior, 'ad hoc' narratives. But social science has been singularly unsuccessful in discovering law-like regularities. One of the main achievements of recent realist philosophy has been to show that this is an inevitable consequence of an erroneous view of causation. Realism replaces the regularity model with one in which objects and social relations have causal powers which may or may not produce regularities, and which can be explained independently of them. In view of this, less weight is put on quantitative methods for discovering and assessing regularities and more on methods of establishing the qualitative nature of social objects and relations on which causal mechanisms depend. (pp. 2-3)

This approach is quite different from variance theory. Pawson and Tilley (1997), in their realist approach to program evaluation, stated that

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When realists say that the constant conjunction view of one event producing another is inadequate, they are not attempting to bring further “intervening” variables into the picture . . . The idea is that the mechanism is responsible for the relationship itself. A mechanism is . . . not a variable but an *account* of the makeup, behaviour and interrelationship of those processes which are responsible for the regularity. (pp. 67-68)

Similar distinctions to that between variance and process theory have been presented by many other writers, including the distinctions between variable-oriented and case-oriented approaches (Ragin, 1987), propositional knowledge and case knowledge (Shulman, 1990), and factor theories and explanatory theories (Yin, 1993, pp. 15-21). Sayer (1992, pp. 241-251) similarly distinguished between extensive and intensive research designs; extensive designs address regularities, common patterns, and distributions of features of populations, while intensive designs focus on how processes work in particular cases.

These arguments suggests that realist, process-oriented qualitative investigations deserve a more prominent place in social research, including experimental research, complementing regularity-based quantitative research. Shadish, Cook , and Campbell (2002), in what is arguably the most detailed and sophisticated presentation of the case for experimental research, stated that

the unique strength of experimentation is in describing the consequences attributable to deliberately varying a treatment. We call this *causal description*. In contrast, experiments do less well in clarifying the mechanisms through which and the conditions under which that causal relationship holds—what we call *causal explanation*. (p. 9)

Referring to a “delicate balance” between causal descriptions and causal explanations, they assert that “most experiments can be designed to provide better explanations than is the case today” (p. 12), and describe several studies in which qualitative methods were used to substantially strengthen the understanding of causal mechanisms in experimental investigations (pp. 390-392).

Realist social researchers also place considerable emphasis on the context-dependence of causal explanation (e.g., Sayer, 1992, pp. 60-61; Huberman & Miles, 1985, p. 354). Pawson and Tilley (1997) sum up this position in their formula “mechanism + context = outcome” (p. xv). They maintain that “the relationship between causal mechanisms and their effects

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is not fixed, but contingent" (p. 69); it depends on the context within which the mechanism operates. This is not simply a claim that causal relationships vary across contexts; it is a more fundamental claim, that the context within which a causal process occurs is, to a greater or lesser extent, intrinsically involved in that process, and often cannot be "controlled for" in a variance-theory sense without misrepresenting the causal mechanism (Sayer, 2000, pp. 114-118). For the social sciences, the social and cultural contexts of the phenomenon studied are crucial for understanding the operation of causal mechanisms.

We argue that a realist alternative to the dominant regularity model of causality can provide a way out of the somewhat polarized confrontation between qualitative and quantitative researchers on this issue of causal investigation (Maxwell, 2004a, 2004b, 2008). It recognizes the explanatory importance of the *context* of the phenomena studied, and does so in a way that does not simply reduce this context to a set of "extraneous variables." It relies fundamentally on an understanding of the *processes* by which an event or situation occurs, rather than simply a comparison of situations involving the presence and absence of the presumed cause. Finally, it legitimates a concern with understanding *particular* situations and events, rather than addressing only general patterns. A process theory of causation does not require abandoning quantitative, variance-based methods for investigating causality; it simply requires recognition that process-based approaches are as legitimate as, and often complementary to, variance-based ones.

## 2. *Mind as part of reality*

The neglect of mental phenomena, or the attempt to deal with these solely within a behavioral, variable-oriented framework, is one of the main problems qualitative researchers identify with quantitative research, and one of the main arguments that qualitative researchers make for adopting a constructivist or interpretivist stance for research, since these approaches inherently recognize the important of the mental realm. However, the types of realism that we discuss here treat mental entities as equally real to physical ones, and as relevant to causal explanations of individual and social phenomena. Sayer stated that "social phenomena are concept-dependent . . . . What the practices, institutions, rules, roles, or relationships *are* depends on what they mean in society to its members" (1992, p. 30). Emotions, beliefs, values, and so on are part of reality; they are not simply abstractions from behavior or constructions of the observer. Realism in this sense therefore does *not* entail materialism, nor is it simply a cover for a reductionist agenda that would attempt to eliminate mental concepts from scientific discourse (Putnam, 1999, p 74 ff.).



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However, realists are not dualists, postulating two different realms of reality, the physical and the mental. In our view, the clearest and most credible analysis of this issue has been that of Putnam (1990, 1999), who argued for the legitimacy of both "mental" and "physical" ways of making sense of the world. He advocated a distinction between mental and physical *perspectives* or languages, both referring to reality, but from different conceptual standpoints. He argued that "The metaphysical realignment we propose involves an acquiescence in a plurality of conceptual resources, of different and mutually irreducible vocabularies . . . coupled with a return not to dualism but to the 'naturalism of the common man.'" (1999, p. 38)

Thus, while realism rejects the idea of "multiple realities" in the sense of independent and incommensurable *worlds* in which different individuals or societies live, it is quite compatible with the idea that there are different valid *perspectives* on the world. However, it holds that these perspectives, as held by the people we study, are *part of* the world that we want to understand, and that our understanding of these perspectives can be more or less correct (Phillips, 1990).

A realist approach thus recognizes the reality and importance of *meaning*, as well as of physical and behavioral phenomena, as having explanatory significance, and the essentially *interpretive* nature of our understanding of the former (Sayer, 2000, pp. 17-18). Combining this view with a process-oriented approach to causality can resolve the long-standing perceived contradiction between "reason" explanations and "cause" explanations, and integrate both in explanatory theories. Weber's sharp distinction between causal explanation and interpretive understanding (1905) obscured the importance of reasons as causal influences on actions, and thus their role as essential components of any full explanation of human action. Realism can deal with the apparent dissimilarity of reason explanations and cause explanations by showing that reasons can plausibly be seen as real events in a causal nexus leading to the action.

Realism also supports the idea that individuals' social and physical contexts have a causal influence on their beliefs and perspectives. While this proposition is widely accepted in everyday life, constructivists have tended to deny the "reality" of such influences, while positivism and some forms of post-positivist empiricism tend to simply dismiss the reality or importance of individuals' perspectives, or to "operationalize" these to behavioral variables. From a realist perspective, not only are both individuals' perspectives and their situations real phenomena, they are *separate* phenomena that causally interact with one another.

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In doing this, a realist perspective can provide a framework for better understanding the relationship between individuals' perspectives and their actual situations. This issue has been a prominent concern in the philosophy of social science for many years (e.g., MacIntyre, 1967; Menzel, 1978), and is central to "critical" approaches to qualitative research. Critical realism treats both individuals' perspectives and their situations as real phenomena that causally interact with one another. In this, realism supports the emphasis that critical theory places on the influence that social and economic conditions have on beliefs and ideologies. Sayer (1992, pp. 222-223) stated that the objects of "interpretive" understanding (meanings, beliefs, motives, and so on) are influenced both by the material circumstances in which they exist and by the cultural resources that provide individuals with ways of making sense of their situations. However, critical realism approaches the understanding of this interaction without assuming any *specific* theory of the relationship between material and ideational phenomena, such as Marxism.

A realist perspective also legitimates and clarifies the concept of "ideological distortion"—that cultural forms may obscure or misrepresent aspects of the economic or social system or the physical environment—while affirming the causal interaction between the physical and social environment and cultural forms. In particular, realism is compatible with what have been called "ideological" or "non-reflectionist" approaches to culture, in which cultural forms that contradict aspects of social structure may serve ideological functions that act to sustain the social system or constitute adaptive responses to the physical or social environment (e.g., Maxwell, 1978). An emphasis on causal processes, rather than regularities or laws, in explaining sociocultural phenomena also allows explanations to be tailored to single cases and unique circumstances, so that different individuals or social groups may have different responses to similar situations, depending on differences in specific personal or cultural characteristics that are causally relevant to the outcome.

### 3. *Validity and inference quality*

Validity and quality are issues for which there have been substantial disagreements between qualitative and quantitative researchers. The types of "validity" (many qualitative researchers don't even use this term) employed in each tradition have little overlap (Teddlie & Tashakkori, 2003), and the basic assumptions involved in the two approaches are radically different. Teddlie and Tashakkori went so far as to recommend abandoning the term "validity" entirely in mixed method research, arguing that the term has taken on such diverse meanings that it is losing its ability to communicate anything (pp. 12, 36-37).

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Despite these differences, there is an important similarity between the typical quantitative and qualitative approaches to validity. Both focus largely on the *procedures* used in collecting data and drawing inferences from these data. This is particularly obvious in the movement for “evidence-based” research, which relies almost entirely on the type of research design as the bases for assessing the validity of the results, with randomized experiments as the “gold standard” for design quality. However, it also characterizes prominent approaches to validity (or its analogues) in qualitative research.

A realist concept of validity is quite different from these procedure-based approaches. Validity, from a realist perspective, is not a matter of procedures, but of the relationship between the claim and the phenomena that the claim is about (Norris, 1983; House, 1991; Hammersley, 1992; Maxwell, 1992). Shadish, Cook, and Campbell, in what is currently the definitive work on experimental and quasi-experimental research, state that

Validity is a property of inferences. It is *not* a property of designs or methods, for the same designs may contribute to more or less valid inferences under different circumstances. . . . No method guarantees the validity of an inference. (2002, p. 34; emphasis in original)

Also, as argued by Keller in the passage quoted earlier (Example 2), a realist approach to validity does not entail that concepts, theories, or claims “reflect” or “correspond to” reality, only that whether these claims “work” depends on their relationship to a reality independent of our constructions (cf. Barad, 2007). While critical realism denies that we can have any “objective” perception of these phenomena to which we can compare our claims, it does not abandon the possibility of *testing* these claims against evidence about the nature of the phenomena.

We see this process of testing claims against the evidence that is relevant to the claims as fundamental to a scientific approach in general. However, the nature of the evidence that is relevant to a claim depends on the nature of the claim. A claim about a person’s beliefs requires a different sort of evidence from a claim about the outcome of a randomized trial of a new drug. Specifically, claims about meanings and perspectives, which fall under the general category of “interpretive” claims, require quite different sorts of evidence from claims about behavior, let alone claims about the relationships between variables. A realist approach to validity also entails that a valid description, explanation, or interpretation must not only be supported by evidence, but must address plausible *alternative* descriptions, explanations, or interpretations of the phenomenon about which the claim is made.

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For these reasons, the main approach to validity in experimental research (e.g., Shadish, Cook, and Campbell, 2002) is grounded in the concept of a validity threat—a possible way that a conclusion might be wrong—and ways to address these threats. However, the emphasis has largely been on the designs and methods used to deal with these threats. This has been facilitated by the fact that this literature has, consistently with a regularity view of causality as inherently general, dealt mainly with *types* of validity threats, rather than emphasizing the actual ways a specific conclusion might be wrong in a given study. The importance of the latter point is implicit in the realist argument above, that validity is not simply determined by procedures (although procedures are obviously relevant to the validity of a conclusion), but must be assessed in the specific context of a particular study. It is also an implication of a realist view of causality as inherently local rather than general.

A realist perspective on validity can thus be of value to mixed method researchers by focusing attention on the specific plausible threats to the conclusions drawn in a given study, which depend on the context and purposes of that study as well on the methods used.

#### 4. *Diversity as a real phenomenon*

Finally, realism implies that diversity is itself a real phenomenon. This fact is most obvious in evolutionary biology, where variation among organisms is the precondition of evolutionary change. Lewontin (1973) argued that the Darwinian revolution replaced a Platonic, idealist view of variation (that variations were simply imperfect approximations to the “ideal” or “type” of a species) with a realist view that saw actual variation as the fundamental fact of biology and the cornerstone of evolutionary theory. Mayr (1982), arguing against the prevailing view that the most important characteristic of a species is the normal “type” of the organism, stated that “the most interesting parameter in the statistics of natural populations is the actual variation, its amount, and its nature” (p. 47).

Similar arguments about diversity have been made for the social sciences, as described above in discussing paradigms. However, both qualitative and quantitative research have tendencies, theoretical as well as methodological, to ignore or suppress diversity in their goal of seeking general accounts, though in different ways (Maxwell, 1995). Quantitative research often aggregates data across individuals and settings, and ignores individual and group diversity that cannot be subsumed into a general explanation (Shulman, 1986). Because of its emphasis on *general* descriptions and causal theories, it tends to impose or generate wide-ranging but simplistic models that do not take account of individual

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variation, unique contextual influences, diverse meanings, and idiosyncratic phenomena.

However, qualitative researchers also tend to neglect diversity. Theoretically, this is often the result of social theories that emphasize uniformity; such theories include a definition of culture as beliefs or practices that are shared by members of a society (Maxwell, 1999), and approaches to community and social order that assume a dichotomy between consensus and conflict (Maxwell, 1996). Methodologically, the sample size and sampling strategies used in qualitative studies are often inadequate to fully identify and characterize the actual diversity that exists in the setting or population studied, and can lead to simplistic generalizations or the assumption of greater uniformity or agreement than actually exists.

Mixed method research provides one way to help overcome the theoretical and methodological characteristics that lead to the neglect of diversity. Qualitative methods and approaches, which focus on particular phenomena and processes and their unique contexts, can help to overcome the biases inherent in universalizing, variable-oriented quantitative methods. Conversely, quantitative methods can provide systematic evidence for diversity, and can help to correct a tendency to ignore complexity and to focus on typical characteristics and shared concepts and themes. However, doing so effectively requires recognizing the reality of diversity.

To sum up this section, we are not simply claiming that realism is a productive stance for mixed method research because it is compatible with both qualitative and quantitative research, and treats the two perspectives as equally valid and useful. We have also argued that realism has important implications for both approaches, ones that push both qualitative and quantitative researchers to examine more closely some issues that they typically dismiss or ignore. Realism can therefore not only help to integrate the two approaches into a more coherent combination, and promote closer and more equal cooperation between qualitative and quantitative researchers, but can serve to increase the usefulness of both approaches.

### **Applications of Critical Realism in Mixed Methods Practice**

Explicit use of realist perspectives in mixed method research is still relatively uncommon, and sometimes involves little more than an acknowledgment that realism has informed the research. For example, Weisner, in his introduction to a collection of papers on mixed method studies of children's development and family life, paid homage to Campbell's

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realist and multiplist approach, saying that this skeptical realism and holism “provides the context and tradition for much of our work” (2005, pp. 5-6), but doesn’t discuss how, specifically, realism did so.

As noted above, the one area in which realist perspectives have had a major influence on mixed method studies is in program evaluation. The work of Tilley (described in Pawson & Tilley, 1997) and Mark, Henry, and Julnes (2000; Henry, Julnes, & Mark, 1998), much of which combined qualitative and quantitative approaches, has provided a realist alternative to traditional ways of conceptualizing program evaluations. In addition, Pawson’s (2006) analysis of literature reviews for evidence-based policy constitutes a major critique of standard ways of integrating qualitative and quantitative results in a literature synthesis, and presents a realist alternative to these approaches.

There is also the potential within realist approaches for incorporating features highlighted by an emancipatory paradigm, and promoting social justice (House, 1991); this is a significant aspect of Bhaskar’s version of critical realism, which has been more prominent in Europe than in the United States. Some important advances based on critical realism have recently been made in mixed methods research in accounting (Brown & Brignall, 2007; Covalleski & Dirsmith, 1983, 1990), operations management (Fleetwood, 2000; Reed, 2005a; Mingers, 2000, 2006) economics (Downward, Finch & Ramsay, 2002; Fleetwood, 1999; Lawson (1989, 1997, 1998, 2001), political science (Patomäki, 2002), and nursing (Lipscomb, 2008; Stickley, 2006).

Modell (2007) used critical realism to develop a unified approach for validating mixed methods research in accounting management. He argues that whereas critical realism shows many similarities to, and has indeed borrowed key concepts from, the pragmatist tradition, it constitutes a more relevant philosophical foundation to this end. Based on examples from the field of management accounting and budgeting in the U.S. nursing area and the jute industry in Bangladesh (see Covalleski & Dirsmith, 1983; Hogue & Hopper, 1994, 1997), Modell’s work explicates how critical realism may inform management accounting research by effectively integrating qualitative and quantitative methods. The examples illustrate the role of context-specific conditions that may only be captured through deeper empirical probing and re-conceptualization. In a later study, Covalleski & Dirsmith (1990) conceded that their quest for a deeper understanding of budgeting derived from a growing realization of the problematic nature using budgeting based on the traditional, positivist approach. The authors describe “freeing” themselves from a priori theories to develop a more contextualized understanding of the lived experiences of interviewees, and produced a more multifaceted conceptualization of budgeting (Covalleski & Dirsmith, 1990).

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In economics, critical realism points to the main limitations of neoclassical economics (based on econometrics principles that are reductionist in nature and presuppose that concepts can be measured, counted, manipulated, and cross-classified), and it provides a philosophical and methodological foundation for a broad set of alternative approaches (see Downward, Finch & Ramsay, 2002; Downward & Mearman, 2007; Fleetwood, 1999; Lawson, 1989, 1997, 1998, 2001). In this regard, within economics, critical realism supports Lawson's view that the exclusive dependence on mathematical/statistical modelling in economics is misguided (Castellacci, 2006).

Olsen (2004) illustrated some of the limitations of the latter approach in two studies of Indian grain markets and peasant farmers, focusing on distress sales in the first, and the gendered nature of poverty in the second. She used both theoretical and methodological triangulation in these studies. Theoretically, she combined neoclassical, Marxist political economy, and feminist political economy perspectives; methodologically, she used a survey of a random sample of farmers, ethnographic observations, in-depth interviews, family histories, and the analysis and documents and secondary data. Her results exposed deficiencies in both the neoclassical and Marxist approaches, and showed the necessity of adding qualitative to quantitative methods to understand the phenomena studied. She concludes with three rules of thumb for realist research: a complex and stratified ontology, explicit value analysis, and getting behind the numbers and mathematical models to causal mechanisms.

Within the field of psychiatry, where hierarchy and control prevail, a critical realist perspective offers a model that does not submit to the dominant discourse but rather recognizes that service users now possess decision-making power, especially in terms of being able to provide services that statutory services providers now require (Stickley, 2006). Based on a power/knowledge discourse, Stickley suggested a critical realist framework that offers a theoretical explanation for *cause* and *change* with an argument for an alternative to accepted models of service user involvement. He argued that since mental health nurses are often the workers who have the most contact with service users, it is essential that they give consideration to the philosophies and approaches that underpin these models that are emancipatory for people who use mental health services.

McEvoy and Richards (2006) justified using a critical realist framework for mixed methods in a case study in nursing of how and why gatekeeping decisions emerge at the interface between primary care and community mental health teams. The quantitative survey helped them to identify patterns of practice, which were confirmed and elaborated by the findings

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from semi-structured interviews. Using mixed methods gave the inquiry a “better sense of balance and perspective” (p. 66). Additionally, the findings from both approaches stimulated retroductive reasoning, a process that involves the construction of *hypothetical* models as a way of uncovering the *real* structures, contexts and mechanisms that are presumed to produce empirical phenomena (Bhaskar, 1978, 1986, 1989). In addition, reliance on retroduction necessitates that the researcher is being explicit about what is being done during the process, including data collection and analysis (Bollingtoft, 2007), leading to the development of a theoretical model that explained why gatekeeping decisions tended to emerge in the way they did.

In summary, we believe that realist perspectives and approaches can make important contributions to mixed method research. These contributions involve not simply an overall perspective within which qualitative and quantitative methods and assumptions can be better integrated, but also specific insights and strategies that can enable mixed method researchers to better understand the phenomena they study.

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### Objectives:

Upon finishing this chapter you should be able to:

1. Understand the main characteristics of critical realism, as the term is used in this chapter.
2. Identify some of the important differences between realism, positivism, constructivism, and pragmatism that are relevant to mixed method research.

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3. Understand why the view of paradigms as logically unified sets of premises that are shared by members of a research community is problematic.
4. Identify some of the aspects of mixed method research for which realism can provide a useful perspective.

Questions for reflection and discussion:

1. How does the realist perspective presented in this chapter fit with your own assumptions about qualitative, quantitative, and mixed method research? Has the chapter changed your thinking about any of these? Do you disagree with any of the chapter's arguments? Why?
2. How could you apply the specific realist approaches described here to an actual study that you might conduct? What difference would these make in how you design and carry out the study?
3. How does the perspective on mixed method research presented in this chapter differ from that in other chapters of the Handbook? How are these different views helpful to you in understanding mixed method research publications, or thinking about how to do mixed method research?