

CHAPTER 9

METATHEORIES IN RESEARCH: POSITIVISM, POSTMODERNISM, AND CRITICAL REALISM

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ABSTRACT

No scholar or researcher is able to provide robust evidence that counters the scant reflection on metatheory – mostly ontology and epistemology – underlying management studies in general, and industrial marketing and purchasing research in particular. This paper is a contribution to the indispensable discussion of metatheoretical alternatives in research, and most importantly, the strengths and shortcomings thereof, and respective implications on research questions, objectives, and findings.

1. INTRODUCTION

“Metatheory” is “what lies beyond or outside any substantive theory, empirical research, or human practice” (Fleetwood & Ackroyd, 2004a). Metatheory thus paves the way for the substantive theory that one is likely to create or endorse, the empirical research that one is likely to undertake (by drawing somewhat on a theory, framework, model, or hypothesis), or the practice that one is likely to effect. Despite the (latent) primacy of

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metatheory in analytical and empirical research, metatheoretical discussions are seldom found in papers or books – the notable exception being those in the philosophy field of study. This state of affairs is of concern to scholars and researchers for often leads to incoherent ontological and epistemological assumptions, and most importantly, to unintelligibility of both one's arguments and others' criticisms.

Any research inevitably builds on a particular ontology (i.e., how the world is), epistemology (i.e., how the world can be known), methodology (i.e., what methods to use in the world's inquiry), and etiology (i.e., what are the world's underlying causes). Every scholar and researcher hold to diverse extents those assumptions, thus embracing a distinct metatheory or "philosophy of science." Scholars and researchers should make metatheoretical commitments unambiguous, if not explicit. Questions set forth and objectives aimed for in research and foremost findings (both theoretical contributions and managerial implications) pointed out by scholars and researchers are all likely to differ according to metatheoretical points of departure. Likewise, any comments on or scrutiny of works need to be made by taking the respective metatheory of scholars and researchers into consideration.

Social scholars and researchers adopt often implicitly one of three (mutually exclusive) metatheories (Fleetwood, 2005): "positivism," "postmodernism," or "critical realism." Whereas positivists see the social world as a closed system wherein cause–effect relations can be readily observed or experienced, postmodernists' diametrical viewpoint is that the social world is fully socially constructed by humankind. For critical realists, the social world is an open system whose existence is largely independent of any knowledge one may have or develop and social science should be critical concerning the social world that aims to tentatively describe and explain.

The structure of the paper's remainder is the following. The next section provides a brief vista on history of science. The third section addresses in detail ontological, epistemological, methodological, and etiological postulates of metatheories that scholars and researchers deploy (for the most part, unknowingly) in social research, namely positivism, postmodernism, and critical realism. Finally, concluding remarks ensue.

2. A VISTA ON HISTORY OF SCIENCE

"Science" derives from the Latin word "scientia," broadly meaning "knowledge." Science is the rigorous and time-consuming activity through

which the world is systematically inquired, described, and explained – though one is likely to take science as including all the outcomes produced by that activity. Science pertains to the production and use of theoretical and empirical knowledge by scientists (i.e., scholars and researchers) and to that scientific knowledge *per se*.

Origins of science can be traced back to the 6th century BC when pre-Socratic philosophers in “Antiquity” (later followed by prominent others such as Socrates, Plato, and Aristotle in 5th and 4th centuries BC) first attempt to discover the world’s governing principles – so-called “metaphysics.” Pre-Socratic Greek philosophers, among which one can find Thales, Anaximander, Pythagoras, Anaximenes, Heraclitus, and Parmenides, are largely responsible for the transition in western thought from the “myth” to the “logos” (the Greek term for “reason”) – a radical shift that implied abandoning hitherto common theological or supernatural explanations of the world and searching for and proposing rational, logic explanations instead. From that time onward, the world’s study through logical reasoning or “philosophy” (or in Greek, “the love of wisdom”) is underway and kindred “logocentrism” (i.e., the belief that pursuit of “pure reason” leads to the discovery of the world’s underlying substance) predominates.

“The Middle Ages,” that is, the western history period between ancient (both Greek and Roman) times and modern era, are heavily marked by a movement known as “scholasticism.” Between the 11th and 14th centuries, scholastics attempt to combine theology and philosophy – the most widely known of combinations being the 13th century synthesis of Christian faith and Aristotelian metaphysics performed by Saint Thomas Aquinas. Medieval inquiry of the world is first conducted at large within monasteries, and later on expanded to other, more proper locations: the first universities created in the late 11th and 12th centuries in Italy, England, and France. Medieval universities founded throughout Europe by then amount to more than 60. The first university ever founded, however, dates back to the 5th century when a learning center of philosophy, astronomy, and other subjects is created in Constantinople (currently Istanbul in Turkey) – formally founded in the 9th century, Constantinople’s university lasts until the 14th century.

The postmedieval period, spanning from the 16th century to present times, is “Modernity.” Since the “scientific method” is first proposed in this period, earlier inquiries of the world are considered as “prescientific.” The scientific method is composed of the necessary principles for the performance of (scientific) investigations, namely observation or experimentation of phenomena; formulation of hypotheses concerning the

phenomena, via “induction” (i.e., “the move from the particular to the general”); tests to demonstrate truth or falsity of proposed hypotheses, through “deduction” (i.e., “the move from the general to the particular”); and finally, the verification of or the need to modify hypotheses. Usually rooted in the “empiricist” tradition, hence privileging the use of quantitative research methods and techniques (see Section 3.1), the scientific method is first employed in natural science and then “appropriated” massively by social scientists.

Modernity includes at least two distinct epochs: the “Age of reason” and “Age of enlightenment” in the 17th and 18th centuries, respectively – some historians nevertheless take the former Age to be a part of the latter. The Age of Reason signals the end of the Middle Ages during which faith commands reason and imposes a scholastic stamp on the world’s knowledge. “Rationalism” (i.e., the belief, that reason rather than experience is the primary source of knowledge) expounded by prominent philosophers such as René Descartes, Baruch Spinoza, and Gottfried Leibniz, prevails. Rationalist positions are later challenged by “empiricism,” the distinguishing feature of the Age of Enlightenment. Leading empiricists (namely, John Locke, George Berkeley, and David Hume) claim that all that can be known results only from human sensory experience.

Empiricist philosophy’s basis, however, is found earlier (in the beginning of the 17th century) when Francis Bacon first proposes the “inductive method” through which one can arrive at universal claims about the world by drawing on multiple observations and experiments and thus discovering “event regularities” or “constant conjunctions of events.” Despite rationalism being in principle opposed to empiricism, one needs to acknowledge that empiricist philosophers are not totally against the use of reason nor do fail to deploy reason (where necessary) in the world’s inquiries.

Nineteenth century witnesses the development of “idealism” and “positivism.” These two philosophies seem to be elaborations of rationalist and empiricist standpoints, respectively. While idealism posited by Georg Hegel and others contends that the world is merely composed of ideas (i.e., the world exists primarily as human consciousness or spirit), the positivism of Auguste Comte and John Stuart Mill emphasizes sense perceptions as unique sources of knowledge. One is prone to say that idealism is a reaction to the materialist position that advocates that the world is matter, essentially physical.

Materialism is formulated as early as the 4th century BC (when the Greek natural philosopher Democritus first proposed “atomism,” a theory arguing

for the world as merely including atoms and empty space) and renewed in the 17th century, for instance, by the English philosopher Thomas Hobbes. Early in the 20th century, positivism underwent a period of systematic reflection driven primarily by the “Vienna circle” and the “Berlin circle,” two groups of philosophers and scientists (e.g., Rudolf Carnap and Carl Gustav Hempel, respectively) formed in the 1920s that met regularly to investigate philosophy of science. Karl Popper later on criticizes and extends the positivism advocated by the Vienna circle.

Scientific progress during Modernity in both natural and social science (especially in 19th and 20th centuries), at large shaped by the empiricist/positivist stance, is overwhelming. Major advancements in physics (e.g., Isaac Newton’s “Law of Gravitation”), chemistry (e.g., determination of oxygen’s role in combustion and respiration or advancement of the first period table of chemical elements by Antoine Lavoisier), or biology (e.g., theory of evolution by natural selection put forward by Charles Darwin) are all fine examples of steady progress in knowledge of the world. That scientific prolificacy seduces many social scientists into the belief that positivism can do for social science what has done for natural science. Over time, positivism gradually disseminates into almost all fields of social science, including management research. Since the mid-20th century, however, positivism is under challenge. For the most part, philosophers of science are increasingly calling into question the soundness of postmodernism in social science. Responses to positivism, often as a whole referred to as “postpositivism,” can be divided in two: “postmodernism” – also entitled “poststructuralism,” “(strong) social constructionism” or “(strong) social constructivism” – featured, for instance, by Alexandre Koyré, Thomas Kuhn, or Paul Feyerabend; and “realism” of Roy Bhaskar and Rom Harré among others. While sharing an animosity to positivism, postmodernists and realists differ fundamentally on ontology: either the social, mostly discursive construction of the world (postmodernism) or the world’s mind-independence (realism). Realist foundations are laid down by the “transcendental idealism” of the 18th century German philosopher Immanuel Kant (1781 [1999]). For Kant, human experience of the world is about how the world appears to human beings, not about how the world is in and of itself – thus distinguishing between “things-in-themselves” (i.e., “noumena”) and human perceptions and conceptions of those things (i.e., “phenomena”). Kant takes the world to have a (more or less apprehensible) structure beyond and independent of human knowledge.

3. ALTERNATIVE METATHEORIES IN (SOCIAL) RESEARCH

The world divides into “natural” and “social,” that is, “nature” and “society,” respectively – the former is inquired by natural science and the latter is the object of study in social science. Science (both natural and social) aims to develop and improve human understanding of the world, thus reducing ignorance and liberating humankind from the restricting influence of dogmas and falsehoods on human behavior (Sayer, 2000). Social science in particular enables and encourages societal emancipation by fostering the development of knowledge (Collier, 1998). Emancipation, that is, “(...) the process through which individuals and groups become freed from repressive social and ideological conditions, in particular those that place socially unnecessary restrictions on the development and articulation of human consciousness” (Alvesson & Willmott, 1992, p. 432), requires, however, more than (new) knowledge: changes in the world’s practice, often motivated by that knowledge, are necessary (Sayer, 2000).

Scholars and researchers necessarily rely on some assumptions whenever undertaking research. Those assumptions, which every “good” scholar and researcher should be aware of (and if necessary make explicit), concern the following: first, the way the world is thought to be (ontology); second, how the world can be known (epistemology); third, which research methods and techniques to employ in the world’s study (methodology); and finally, what causes make and change the world (etiology). Ontology relates to the nature or substance of the world, that is, the (kind of) “things” that exist in the world. Epistemology, on the other hand, is focused on how human beings can acquire or develop knowledge of the world. Ontology and epistemology are clearly distinguished: the “nature of being” and the “knowledge of being,” respectively (see, e.g., Ackroyd & Fleetwood, 2000a). Methodology is focused on the methods and techniques to deploy in the world’s inquiry, mostly in scientific research. Finally, etiology concerns the causes underlying the world. Ontology is the overriding metatheoretical dimension that strongly influences epistemology, methodology, and etiology.

Ontological, epistemological, methodological, and etiological assumptions constitute the “metatheories” or “philosophies of science” of scholars and researchers, namely positivism, postmodernism, and (critical) realism. Although positivists take the world as mind-independent, thus objectively “given” (by observation and experimentation), postmodernists argue that the world is socially (and discursively) constructed by humans; for (critical) realists, the world is complexly brought about by interlocking causes and

one needs to be critical of the object of study in social research – plain realism is applied only in natural science.

Metatheories should not be confused with the substantive theories that one usually employs or devises in research – though any metatheory influences to some extent the substantive theory adopted or created by scholars and researchers. The relation between metatheory and theory is loose rather than tight (Sayer, 2004): having the “right” metatheory does not necessarily leads one to develop a “right” or unchallengeable theory; yet, one is very unlikely to arrive at a “right” theory by drawing on a “wrong” metatheory (though this can happen by pure chance). Both metatheories and theories change – the latter changing more often and sometimes radically.

Metatheory and theory are issues infrequently discussed by management scholars and researchers (Tsoukas, 1994). Although metatheory is almost altogether neglected (Fleetwood, 2007b), theory is rarely an object of analysis within management subfields of study. To the best of the author’s knowledge, worthy exceptions on metatheoretical reflections include the following: Tsoukas’ (1989) and Easton’s (2000) arguments in favor of the epistemological suitability of case research; discussions promoted by Lawson (1997) and Fleetwood (1999a) on the adequate metatheoretical basis for economics; Easton’s (2002) apologia for a critical realist standpoint in the industrial marketing and purchasing field of study; discussions on ontological and epistemological issues in management studies primarily from either a postmodernist or realist perspective (e.g., Jones & Bos, 2007; Westwood & Clegg, 2003). Abstract reflections on theory include, for instance, the *Academy of Management Review*’s 1989 and 1999 fora on “theory building and improving” and “theory testing” (Langley, 1999; Poole & Van de Ven, 1989; Tsang & Kwan, 1999; Van de Ven, 1989; Weick, 1989; e.g., Weick, 1999; Whetten, 1989) and a forum on “what theory is not” (DiMaggio, 1995; Sutton & Staw, 1995; Weick, 1995) and Astley’s (1985) paper in the *Administrative Science Quarterly*.

Where metatheoretical commitments are unclear or remain unexamined (or worse, are “buried” within developed or espoused theories), one is likely to find scholars and researchers at cross-purposes, talking past one another instead of engaging in constructive and intelligible debates. This is the case with some of “postmodernism versus realism” dissensions: see, for instance, a heated skirmish taking place in the strategic management field over appropriate metatheoretical presumptions between Kwan and Tsang (2001) and Mir and Watson (2001, 2000). In the “battle” of theoretical or empirical disagreements, social scholars and researchers often reject the descent to the

metatheoretical level – on occasion by claiming (in case of metatheoretical flaws clearly identified in one’s work) to be just reproducing ontological inconsistencies of objects of study, for instance, lay persons. Social scholars and researchers know, however, that such reproduction is unacceptable and should instead critically report “ontological oscillations,” that is, identify inconsistencies and comment on possible causes and consequences (Fleetwood, 2005). All scholars and researchers benefit from being explicit about and mindful of own ontology – though there is the remote possibility that a scholar or researcher straddles intendedly two different ontologies (Fleetwood, 2007a). See, for instance, Sousa and Castro (this volume) on a discussion of the causes of relationship significance, by explicitly drawing on a critical realist metatheory.

Social science in general and management research in particular, since inception in the first decades of the 20th century, are dominated by positivism. Fleetwood (2007a) advances two motives accounting for the positivist orthodoxy: most of the research methods courses attended by postgraduates in universities draw (at least implicitly) on positivism, focusing exclusively on quantitative methods and techniques; and as the courses on philosophy of science are extremely rare to find in universities, thus leaving absent the valuable discussion on the adequacy and shortcomings of each of the available metatheories. Unsurprisingly, many social scholars and researchers are unaware of the deficiencies of positivism and that metatheoretical alternatives do exist.

Some social scholars and researchers, however, start to challenge the dominant metatheory, especially from the 1980s onward. Postmodernism arose as a fierce and shocking reaction to the positivist orthodoxy that claims the world to be objectively available and capable of being easily known by the systematic application of empirical research techniques. The development of postmodernism is often denoted as the “turn to discourse” or the “linguistic turn” in science. The distinguishing feature of a postmodernist view is the belief that the world is not known objectively at all and what is known is merely the sole creation of humankind, that is, the outcome of variegated aims, actions, and interactions, and conventions of humans.

Some of those who call into question the suitability of (prevailing) positivism encounter or stumble on what they take to be the only alternative, namely postmodernism – as if only two competing metatheories are available to inform and guide research. The common line of reasoning is that the world is either objective or merely the product of human discourse. It is very common to find postmodernists wrongly treating (critical) realism

as synonymous with or a disguise of positivism, as if the empirical or naive realism of positivists and the critical (or qualified version of) realism are the same thing (e.g., Mir & Watson, 2000, pp. 944–945). This explains why many postmodernists think that the only alternative to the spurious “scientificity” of positivism (and useless quest for “absolute truths”) is “relativism” or “conventionalism,” that is to say, that truth is relative to proponents or collectively agreed upon, respectively. What is striking is that postmodernists posit an impoverished realism when assume the existence of discursive or ideal entities only (Fleetwood, 2005) – see more on postmodernist ontology (Section 3.2).

Rejection of positivism does not mandate an allegiance to postmodernism, for there is (critical) realism. Positivists and realists, despite sharing in part the assumption of a mind-independent world, differ strongly with respect to the existence of observables and unobservables in the world. Positivists take observation and experimentation procedures as primordial ways to attest ontological claims, thus privileging the observable over the unobservable – the “empiricist prejudice” (Fleetwood, 2002a). Positivists thus fail to take the existence of unobservables into account – or at the least neglect unobservables. Realists, however, consider both the observables and unobservables of the world as objects of potential inquiry.

The work of some reputed social scholars and researchers is rooted neither in positivist nor in postmodernist metatheories. For instance, widely known economists such as John Commons, Friedrich Hayek, Nicholas Kaldor, John Keynes, Carl Menger, George Shackle, Adam Smith, Joseph Schumpeter, and Thorstein Veblen, and reputed sociologists as Karl Marx and Max Weber, all draw on various forms of realism – despite for the most part not using the term “realism” (Fleetwood, 1999b). Realism is not a recent metatheoretical reaction against postmodernism. No late “realist turn” occurred in science (cf. Contu & Willmott, 2005; Reed, 2005). Yet, realism only gains prominence since the mid-1970s, after the sophisticated variant known as critical realism is carefully articulated and refined by Bhaskar (1975) and others (e.g., Harré & Madden, 1975; Sayer, 1984). Collier (1994) addresses the pivotal influence of Bhaskar on the development of critical realism. For incisive introductions to critical realism, see, for instance, Archer, Bhaskar, Collier, Lawson, and Norrie (1998) and Danermark, Ekstrom, Jakobsen, and Karlsson (1997).

Popularity of postmodernism notwithstanding, many scholars and researchers are now increasingly prone to endorse critical realism. Indeed, one can find multiple examples of scholars and researchers who adopt (mostly in an implicit way) a realist perspective in social research.

By acknowledging that the world includes phenomena that exist independently of any knowledge, a large number of scholars and researchers may be called “minimal realists” (Sayer, 2004). Ackroyd and Fleetwood’s (2000b) and Fleetwood and Ackroyd’s (2004a) edited volumes are instances of the growing number of realist-inspired works across various subfields of management, from human resource management through operations management to industrial marketing and purchasing and others. Realism even seems to be the orthodoxy among management practitioners, as Fleetwood and Ackroyd (2004b) and Hesketh and Fleetwood (2006) observe.

This paper addresses seriatim the three metatheories that scholars and researchers employ (explicitly or implicitly) in social research. Positivism and postmodernism are both presented at large uncritically, along with (unsound) respective views of ontology, epistemology, methodology, and etiology. Criticisms to positivist and postmodernist standpoints are suspended until critical realism is detailed.

3.1. *Positivism*

Positivism, also often referred to (in various versions) as empiricism, “foundationalism,” “instrumentalism,” “logicism,” “modernism,” “objectivism,” or “scientism,” is the orthodox metatheory deployed in natural and social science. Although one can encounter many versions of positivism, this paper addresses the variant in which positivism is conventionally depicted, or as Easton (2000, p. 212) perceptively says, its “lowest common denominator version.”

In general, positivists do not engage in (allegedly useless and sterile) metatheoretical discussions. Positivists just “get on with research,” taking for granted the metatheory available (positivism) and ignoring metatheoretical alternatives (postmodernism and critical realism). Positivism builds on several assumptions: an empirical realist ontology, equivalence of explanation and prediction, large-scale deployment of induction and deduction, and universality of closed systems and the conception of causality as cause–effect relations (resulting from presumed ontology and epistemology). Hempel and Oppenheim’s (1948) analysis of the essential characteristics of scientific explanations is a fine example of the positivist standpoint in science – one encounters *passim* therein both explicit and implicit references to positivist postulates (see, e.g., p. 142 on latent assumptions of ubiquity of closed systems and constant conjunctions of events).

3.1.1. *Ontology*

Positivists advocate an empirical realist ontology: there is a world “out there” composed of observable, perceptible, measurable, and quantifiable phenomena, all waiting to be discovered, sensed, and explained by humans. Phenomena, however, exist regardless of human knowledge whatsoever. That is, the world predates human beings though, ontologically speaking, all that exists can be known by humankind (via observations or experiments). In other words, what cannot be observed or experienced is unlikely to exist – at the very least, is ruled out of scientific research. Positivists do not deny a priori the existence of phenomena that cannot be known (i.e., observed or experienced), but are prone to exclude that phenomena from inquiries (Fleetwood, 2001). Some philosophers of science (e.g., Muller & van Fraassen, 2008; van Fraassen, 2004a, 2004b, 2004c) try to extend the scope of empiricism to include phenomena that, despite inaccessible to the naked eye, can nevertheless be observed through the use of various instruments, for instance, microscopes or telescopes. Yet this sophisticated “empirical stance” is not usually taken up by positivists in social research who still privilege that, which can be observed, experimented, and as a result somehow measured.

3.1.2. *Epistemology*

Positivists endorse Locke’s (1690 [1998]) belief that the human mind is born blank – a “tabula rasa” or a “blank slate” – on which the world “writes” through experience of five human senses (namely, sight, hearing, touch, taste, and smell). Positivism presumes a clear-cut distinction between “subject” and “object” – a distinction which Sayer (1984) argues to be strongly rooted in a set of parallel dualisms (e.g., “reason–emotion,” “mind–body,” “fact–opinion,” and “thought–action”) in which left-hand terms are unequivocally superior to right-hand ones.

Positivism assumes the existence of a direct and largely theory-neutral access to the world, through observation or experimentation. One is likely to find empirical research on which the world’s phenomena are recorded, measured, and quantified, even without the guidance of any substantial theoretical basis (Fleetwood, 2007a). All knowledge of the world results from the observation or experimentation of multiple instances of phenomena, namely “event regularities.” From the application of scientific procedures follows inductive generalization (from the “sample” to the “population” under study) and thus postulation of universal laws governing the world. Positivism features a nomothetical or instrumentalist (i.e., “law-seeking”) approach reigns.

Quest for Truth in Positivist Science. Positivists pursue fiercely the truth of (scientific) knowledge, hence attempting to make that knowledge a perfect mirror or accurate representation of the world. Truth of knowledge claims is assessed through empirical tests of hypotheses (postulated via induction). Truth is established whenever verification is empirically achieved or instead, as Popper (1963, 1959) contends, whenever falsification cannot be attained. Truth is, therefore, obtainable (without major problems) by following the rules of “good” scientific practice. Positivists can thus be accused of foundationalism, for all scientific knowledge produced is given a character of absolute truth (or complete objectivity or validity) in the sense that that knowledge is totally independent of subjectively held beliefs of producers (i.e., scholars and researchers). At the same time, positivists hold in notorious disregard other kinds of human knowledge (especially lay knowledge) – this “intellectualist prejudice” is probably an unintended consequence of the “enlightenment project” wherein positivism first emerges, a project that despite presupposing that scientific knowledge must contribute decisively to “enlighten” society as a whole, benefits mostly the academic élite and deepens the intellectual-lay societal division of labor (Sayer, 1984).

Positivists take a rather static view on scientific knowledge, seeing that knowledge as a product that once developed by science can be easily stored, accessed, and widely disseminated. The development process of scientific knowledge is characterized by cumulative accretion and is usually not subject to analysis or discussion. Positivists neglect or consider irrelevant the sociology of science, that is to say, the conspicuous (yet not determinant) influence of social conditions of and interrelations among scholars and researchers in the creation, extension, and assessment of scientific knowledge.

Prediction and Explanation. The main objective of positivist science is prediction. The unequivocal criterion to evaluate the maturity of a science is the predictive power of that science regarding the object of study. Prediction (as objective) helps to reveal a striking feature of positivist science, namely that positivists, when believe that they are capable of offering more or less “precise” predictions on a phenomenon, also feel capable of “explaining” that phenomenon – and whenever endowed with a “sound” explanation, positivists can also “predict” future occurrences of the phenomenon. The conflation of prediction with explanation, often referred to as the “symmetry thesis,” is recurrently found in positivist science – the primary difference between the prediction and explanation being that the former is

directed toward future occurrences of the phenomenon, whereas the latter is only concerned with past occurrences. This conflation is discussed at length in the critical realist epistemology (see Section 3.3.2).

3.1.3. Methodology

Positivists often employ (sometimes even without acknowledgment) a version of the “deductive-nomological” (D-N) or “covering law” model by which a phenomenon is explained or predicted through logically deducing or inducing the phenomenon (i.e., “explanandum”) from both a set of antecedent conditions and the general laws governing such phenomenon (i.e., “explanans”; Hempel & Oppenheim, 1948, p. 138).

Positivists make an extensive use of induction and deduction in the development of scientific explanations and predictions (D’Andrade, 1986), in general by resorting to quantitative research techniques (e.g., variance and regression analyses, structural equation modeling). That nomothetic research, also labeled as “extensive” (Sayer, 1984, 2000), is tested mostly via replication studies.

3.1.4. Etiology

Whenever searching for the cause of an event (i.e., whatever “produces” that event), positivists presume that cause to be another event, typically a preceding one. Events are all that positivists have in the ontological locker: “[i]f one event is observed or hypothesized, one can seek only its cause in terms of another observed or hypothesized event” (Fleetwood, 2001, pp. 206–207). Although events are a priori atomistic, one is likely to find (via observation or experimentation) certain events that are related by successive occurrence over time. Inasmuch as events are constantly conjoined, events’ temporal succession is equated with causality. Cause–effect relations are likely to be readily identified by positivists: that, for instance, the event Y is “caused by” the event X , also possibly styled as “ $Y = f(X)$.” An event (measured or approximated in a “dependent variable”) is a “function of” the preceding event (measured or approximated in an “independent variable”) for changes in the magnitude of the latter account for (i.e., “explain”) changes in the magnitude of the former. The obsession with measurement and quantification (in attempt to facilitate statistical manipulation of variables and perform tests of hypotheses) leads positivists to inadequate conceptualizations at least of social phenomena, for the mostly qualitative and multidimensional nature of the social world is overlooked (Hesketh & Fleetwood, 2006).

Causality is couched in terms of “functional” relations, thus boiling down to constant conjunctions of events, that is to say, (“lawful” or “law-like”) event regularities (Fleetwood, 2001). These (deterministic or stochastic) laws governing the world are, respectively, styled by positivists as, for instance, “whenever event *X*, event *Y* follows” or “whenever events *X*, *Y*, and *Z*, event *W* (on average or with *K* probability) follows.” That conception of causality – often denoted as “Humean causality,” after Hume (1739 [1985]) – is valid only in a world wherein closed systems prevail. Humean causality, therefore, implies that the world as a whole is a closed system, which neither contemplates endogenous change nor is subject to varying exogenous influences. According to Bhaskar (1975), a closed system necessarily complies with two closure conditions: absence of internal change within the system of interest (internal closure condition); and constancy of external influences over that system, that is to say, “other things being equal” (external closure condition). An open system fails to meet one or both of closure conditions. The realist view of open and closed systems differs from that of “systems theory” – a transdisciplinary theory founded in the 1950s by the Austrian-born biologist Ludwig von Bertalanffy (1850) who studies the structure and properties of systems. Advocates of systems theory take each phenomenon as a structure, that is, an ensemble composed of several interacting and interdependent parts that give rise to emergent properties (not found in constituents alone) – in contrast to classical “reductionist” approaches focused on a single element of phenomena. Systems theory classifies systems as open or closed depending on the presence or absence, respectively, of the system’s interaction with surrounding environment, whereas critical realists add the requirement of lack of internal change for a system to be closed. Systems theory seemingly takes for granted the inevitability of any system’s internal change.

3.2. Postmodernism

Postmodernism arises in the early 1970s as a fierce and shocking reaction to the positivist orthodoxy ruling in the social science: for instance, “theory-neutral observation” postulated by positivism is promptly rejected by postmodernists that endorse instead “observation-neutral theory” (Sayer, 2000). Postmodernism is also frequently called (and incorrectly equated with) “conventionalism,” “idealism,” “interpretivism,” “relativism,” “(strong) social constructionism” or “(strong) social constructivism,” or “subjectivism.” The development of postmodernism is often denoted as the

“turn to discourse” or the “linguistic turn” in science – the notions of “discourse,” “language,” and “rhetoric” (and sometimes even “thought” and “knowledge”) are used interchangeably by postmodernists as referring to instruments by which one constructs the world.

Although not avoiding reflections on metatheoretical issues (particularly in harsh criticisms of positivism), postmodernists usually overlook critical realism (see, e.g., Frankel, 1986; Heller, 2001; Westwood & Clegg, 2003) and normally conflate philosophy of science with sociology of science – as if social relations within and among scientific communities determine per se the ontological, epistemological, methodological, and etiological assumptions of scholars and researchers.

3.2.1. *Ontology*

Postmodernism’s ontology is difficult to ascertain because postmodernists are in general ambiguous when make claims on the world’s constituents. Although almost all postmodernists admit the centrality of discourse in the discursive construction of the world, some postmodernists make the strong claim that the world is entirely socially constructed by the human mind – or, in other words, the world “lies in the eyes of the beholder” (Berger & Luckman, 1966). A few postmodernists, however, are unwilling to make such a strong claim and adopt – what Fleetwood (2005) calls – a “weak social constructivist” or “weak social constructionist” position postulating that only a part (but not all) of the world is socially constructed and admitting the existence of extra-discursive phenomena. This “weak” version of social constructivism is acceptable to critical realists.

One faces a concept- or theory-determined world, a world that does not predate humans and may even not exist or stop existing if one somehow (e.g., discursively) chooses so. The world is a “figment of human imagination”: “wishful thinking” prevails (i.e., the world is everyone’s wishes for it) and multiple “realities” are thus likely to exist – as many as available thoughts.

3.2.2. *Epistemology*

Conventionalism and Relativism. For postmodernists, multiple (scientific and lay) knowledge claims can be arrived at via human ingenuity and creativity (Kuhn, 1970) – and, in a truly “pomo” way, “anything goes” (Feyerabend, 1975). The epistemic status of those knowledge claims is determined through human convention, being intersubjectively agreed upon. Postmodernism contends that the absolute truth (strenuously aimed to by positivists) is both meaningless and unachievable. On the contrary,

the truth of a knowledge claim is “relative” to the extent that boils down to a mere convention: truth is a matter of agreement, negotiation, and collective consensus, therefore never being absolute. Inasmuch as the truth of every knowledge claim (or theory) is always relative to respective proponents or adherents, skepticism is likely to reign. This relativist stance can be expressed in the following way: “As an X-ist, I believe only in Z and W.” Any theory is thus observation-neutral, not being susceptible to corroboration or refutation by the use of empirical data (Sayer, 2000). In addition to this (kind of) relativism – that no knowledge claim can be shown to be better than any other (so-called “judgmental relativism”) – one can find “epistemic relativism,” that is, the world can only be known in terms of human discourse.

Science and its Development Process. Postmodernists overemphasize the discontinuities in the development process of science, depicting that process as marked by lengthy periods of stability on occasion interrupted by turbulent “scientific revolutions” or “paradigm shifts.” Kuhn (1970) argues that science is essentially about “puzzle-solving” (i.e., finding solutions to the “small” problems left unsolved by guiding analytical “paradigms”). Several of those problems, however, resist solution, in spite of multiple attempts over time to do so with the use of the ruling paradigm: a trial-and-error period is then sure to follow, often culminating with the replacement of the existing paradigm by a new paradigm that is capable of solving the triggering “anomaly” – in Kuhn’s terminology. Whenever embracing such a Kuhnian perspective, postmodernists see scientific knowledge as divided into monolithic blocks, in general mutually “incommensurable” (i.e., unintelligible) and thereby rule out any possibility of theoretical cross-fertilization or of settling potential intertheory disputes.

The primary goal of postmodernist science is to uncover the political agendas (and the “hidden power”) driving the social construction of the world – see, for instance, Michel Foucault’s (1980) work on the close relation between knowledge and power. Explanations offered by postmodernists concern both whoever produces the world-shaping discourses and why those performative discourses are collectively accepted. Predictions are simply not part of postmodernist science’s agenda. Contra the nomothetical perspective of positivism, postmodernists adopt an “idiographic” approach concerned with the “particular” (and its detailed explanation), disdaining the discovery of allegedly general laws.

3.2.3. Methodology

Postmodernists prefer to employ qualitative methods and techniques in research (e.g., discourse analysis), probably an instinctive reaction to the obsessive preference of positivists for quantitative research. Many postmodernists go further, tacitly accepting Feyerabend's (1975) "methodological anarchism" that strongly objects to any single (often empiricist) research method as the only pathway to truth of knowledge. Feyerabend argues in favor of the "methodological pluralism" in science, claiming that prescriptive methodological guidelines limit severely the activities of scholars and researchers, and as a consequence, restrict scientific progress.

3.2.4. Etiology

Discourse is the fundamental cause governing the world – though one is unlikely to find explicit references to etiology in postmodernists' knowledge claims and even be perplexed to see that postmodernists, if inquired about etiological assumptions, are likely to suggest that etiology is simply a social construct, hence denying – in antirealist fashion – causality as an objective feature of the world.

3.3. Critical Realism

Critical realism is developed by Bhaskar (1975) and others (e.g., Harré & Madden, 1975) by building on Kant's (1781 [1999]) transcendental reasoning. In addition to the endorsed realist viewpoint, critical realism argues for social science that is critical of the (social) world aimed to tentatively describe and explain. Social scholars and researchers are urged to be critical in accounts or claims (i.e., theories, conceptual frameworks, models, or concepts) of objects of study, contributing to and reinforcing the potential emancipatory role of social science. A critical social science features not only research on "what is" but also criticisms on "what is" and developments of "what might be" (Sayer, 2000). Social science must be both positive and normative, therefore describing, explaining, and judging what is the case as well as issuing prescriptions about what should be the case (Sayer, 2004). This normative orientation is accounted for the world being different from what one would like the world to be; otherwise, prescriptions would be dispensable.

Critical realism is generally seen as an "underlaborer" and occasional "midwife" for a variety of substantive work in social science (Sayer, 1984).

Critical realists are prone to reflect deliberately and extensively on metatheory, offering several counterarguments to both positivist and postmodernist worldviews.

3.3.1. *Ontology*

Critical realist ontology postulates the existence of a by and large mind-independent world (Bhaskar, 1975). That is to say, almost all the world's "entities" and "events" (as well as the "relations" within and among entities and events) exist independently of one's identification (or knowledge). To think otherwise is to presume that the world is but a reflection of human knowledge – and this is an unfortunate "intellectualist" position. Fleetwood (2005, pp. 198–199) prefers the term "identification" to "knowledge" – of the world as a whole or of its basic constituents – because the former includes the latter (either in tacit or explicit form, i.e., "know-how" or "know-that," respectively) as well as other human cognitive activities (e.g., observation, experimentation, and even conception and interpretation).

Rejection of the Empirical Realist Stance. Diverse entities and events, both of which need not be observable, coexist in the world. In direct opposition to the empirical realism of positivists (advocating that what one can observe is all that exists), neither entities nor events of the world feature necessarily materiality or are confined to the realm of observable. For critical realists, "observability" (or its closest ally, "experimentability") is not the definitive criterion that allows one to make ontological claims. As Fleetwood (2005, p. 199, emphasis in original) says, "God may or may not be real, but the *idea* of God is as real as mount Everest (...)." Positivists conflate ontology with epistemology and thus can be accused of committing the "epistemic fallacy" (Bhaskar, 1975), reducing the world to what is (or can be) known via human senses.

Although the world is composed of entities, events, and relations, one is likely to take entities as the primordial components of the world: relations are established, developed, sustained, and terminated by entities only; and events are "produced" by entities, that is, events are brought about whenever entities' powers are exercised, under the restriction of several contingencies (i.e., the presence or absence of other entities or the exercise or dormancy of entities' powers) – see section "Tendencies": The "Transfactuality" of Powers.

The World's Entities. Mind-independent existence applies to all kinds of entities of the world: "material," "ideal," "social," or "artifactual" ones

(Fleetwood, 2004). As illustrative examples: mountains and rocks, and computers and tables (i.e., material and artifactual entities, respectively) exist regardless of any knowledge one may develop or have of those entities; accounts, symbols, and beliefs (i.e., ideal entities) endure independently of respective proponents' or adherents' arguments as well as criticisms of contenders; the United Nations, and the markets and networks in which firms operate (i.e., social entities) exist regardless of respective creators and the scholars and researchers aiming to build knowledge about the latter. Fleetwood (2004) refers to material, ideal, social, and artifactual entities of the world as the four "modes of reality."

Material entities are not devised by humankind (and would continue to exist even in case of human beings' extinction); on the other hand, ideal, social, and artifactual entities are dependent for existence on the activities of human. Yet, as Fleetwood (2004) argues, only some human beings (namely scholars, researchers, and lay people) and some human activities (in particular those related to identification can be dispensed with) are involved – some but not all of the time – in the reproduction and transformation of ideal, social, and artifactual entities.

Fleetwood (2005) makes five remarks on the world's entities: first, entities are likely to change over time; second, each entity needs not be of a unique kind (e.g., despite usually seen as an ideal entity, a theory can also be considered a social entity since is largely shaped by long-lasting interpersonal relations that scholars and researchers establish, develop, and sustain among themselves); third, social entities, like ideal ones, are in essence immaterial; fourth, some postmodernists (particularly those adopting a strong social constructivist ontology) commit the mistake of merging material, artifactual, and social entities into ideal ones, that is to say, nondiscursive entities into discursive ones – as if extradiscursive phenomena are but an epiphenomena of discourse; finally, critical realists recognize that nondiscursive entities may have a discursive counterpart, that is to say, all material, artifactual, and social entities can be a subject of discourse whereby related ideal entities are created (e.g., a stone and the theory of that stone's origin and structure). One can discover that the referent of an ideal entity is itself another ideal entity (e.g., a detailed explanation on the evolution of a particular theory; Fleetwood, 2005).

Entities' Relations: "Necessity" versus "Contingency". Critical realists assume the existence of two kinds of relations within and between the world's entities: "necessary" and "contingent" relations, that is to say, "necessity" and "contingency." Necessary relations stand for what

inevitably “must go together,” while contingent relations represent what “can go together” but does not have to. The distinction between necessity and contingency is summed up as “what must be the case” and “what can be the case,” respectively (Sayer, 1984). One should stress that the term “contingent” holds here a different meaning from that usually assumed (which is “to be dependent on”), namely “neither necessary nor impossible” or in other words, “potential” (Sayer, 1984, 2000).

Although relations between entities are noteworthy, relations within entities can also be identified (i.e., relations between entities’ structural features). All entities of the world are by and large contingently related, though some necessary relations among entities can also be found. The openness of the world (see section *Openness of the (Social) World*) makes the existence of necessary relations between events very unlikely. Events can only be contingently related, for no constant conjunction of events (or cause–effect relations) can be found in the world.

Necessity divides in two (Harré & Madden, 1998; Sayer, 1984): “natural” (or “material”) and “logical” (or “conceptual”). Whereas natural necessity pertains to relations among the world’s material constituents, logical necessity concerns relations among concepts or terms (e.g., as in “husband–wife”). Natural necessities often bring about conceptual necessities, that is to say, the former are represented by scholars and researchers via scientific discourse. A relation is necessary (e.g., between the entities “husband” and “wife”) in the sense that what each of those entities is depends on its standing in that relation, that is to say, each entity cannot exist without the other (and ultimately without the relation itself) – the existence of a husband necessarily presupposes a wife’s existence, the change of husband is tied to a wife’s change, and vice versa. On the contrary, when the relation between two entities is contingent, then either of connected entities can exist without the other (and without the relation): as an illustrative example, a “man” can exist without a “woman” (and a man can change without being implicated by, or implicating a woman’s change) as well as the other way around. Necessary relations are not necessarily more important than contingent ones (Sayer, 2000). Both necessary and contingent relations can be equally important for connected entities. For instance, the contingent relation of entity X with entity Y may be as important as (or even more important than) X’s necessary relation with entity Z.

The world displays four notorious relations (Sayer, 1984), some of which are addressed in sections below: necessary relations between the elements composing each entity’s structure; necessary relations between the structure and powers of each and every entity; contingent relations between an

entity's powers and the effects resulting from the exercise of powers; and contingent relations between an entity's powers and surrounding contexts. Another relation can be pointed out, in line with Fleetwood (2001): necessary relations between the powers and "tendencies" of an entity – tendencies being the effects that powers usually bring about. See more on tendencies (or the "transfactuality" of powers) in section "Tendencies": The "Transfactuality" of powers.

One should bear in mind Sayer's (1984) notes on change within and symmetry of relations: first, although change can happen within contingent relations (e.g., contingently related entities can "causally" affect each other in terms of respective powers), mutual change prevails only in necessary relations (e.g., an entity's powers change when the structure of that entity is somehow modified); and second, necessary relations can be asymmetric to the extent that one entity cannot exist without the other (and without that relation) but not the other way around.

Although one is able to find both necessity and contingency in the world – some entities are necessarily related while others are only contingently so – positivists take necessity to be absolutely absent from the world (Sayer, 1984, 2000). Positivists support both "ontological atomism" (i.e., ubiquity of discreteness in the world) and the kindred "universal contingency" (i.e., all relations within and among the world's constituents are contingent).

Structure and Powers of Entities. Each entity of the world has a peculiar nature, exhibiting a set of structural properties that are in general interlinked (Fleetwood, 2004). Although all entities are composed of structures (which themselves can be microentities), some of those entities are inserted into other, larger structures (i.e., meso- and macroentities; Sayer, 2000). Consider the following example: firms (as entities) have heterogeneous structures and by connecting with other structures (e.g., suppliers and customers), it is likely that interfirm relationships, nets, and networks (that can be depicted as micro-, meso-, and macrostructures) are brought about.

Each and every entity has an intrinsic nature that makes each entity the kind of "thing" that it is and not anything else. By virtue of that nature, each entity is endowed with a set of "causal powers and liabilities," hence being both capable of doing some things and incapable of doing others (Harré & Madden, 1975) – for critical realists, "causal" is tantamount to "bring about change" (Sayer, 2004). For instance, human beings have the powers to reason, talk, and invent (owing to human physiological and social features), and firms have the power to generate goods or services (because of

heterogeneous resource and competence endowments). Entities' powers and liabilities can also be denoted as "dispositions," "potentialities," or "capacities," and "susceptibilities," respectively (Fleetwood, 2001). In line with Sayer (1984), an entity's liabilities entail the absence of some of the expected or desired powers. For ease of exposition, "causal powers and liabilities" are simply referred to as "powers" henceforth.

By placing emphasis on the nature or structure of the world's entities, critical realism is often charged with the label of "essentialism." That is, critical realism is presumably focused on the discovery of a fundamental (often singular and fixed) essence of entities through a theory-neutral observation and inductive reasoning. Critical realism, however, should not be confused with essentialism: essentialism aims to identify both "generative" and "distinguishing" properties of entities (i.e., properties that determine what an entity can and cannot do and properties that permit that entity to be clearly distinguished from other entities, respectively); critical realism aims only at the identification of generative properties while acknowledging the possibility of structural changes over time (Sayer, 2000). Critical realism distinguishes between "essential" (or necessary) and "incidental" (or contingent) properties of entities (Sayer, 2000).

Emergence, Diversity, and Potential Exercise of Powers. Entities have usually "emergent" powers. Powers of an entity emerge mostly from the powers of individual structural constituents but also from powers of the relations that that entity develops and maintains with other entities – this is tantamount to say that powers are irreducible to any of (i.e., are more than the sum of) these two referred powers.

For critical realists, not only entities have a structure, and as a consequence, powers. Some of (necessary or contingent) relations that entities establish, nurture, and sustain among themselves possess a particular nature, hence being endowed with powers (Sayer, 1984, pp. 104–105). Some scholars and researchers working under the sociologist "agency-structure" framework (Giddens, 1876; Parsons, 1937) claim that relational structures are endowed with powers (e.g., see Elder-Vass, 2006; Fleetwood, 2007a). For those scholars and researchers, "social structures" – such as those of "families," "communities," or "cultural groupings" – preexist (extant) "agents," whereas agents draw on, reproduce, and transform social structures over time: social structures are conditions for, and continuous outcomes of, human agency. In brief, the entities' relations can be causal. Powers of any relation derive at large from powers of connected entities,

primarily powers of the two parties directly connected via the relation but also of others indirectly connected to them.

Not all entities of a given kind – naturally endowed with a similar nature, that is, sharing a certain set of generative properties – have necessarily the same powers. Similarity at one lower level stratum of the world (e.g., chemical or biological) need not imply similarity at another higher level stratum (e.g., social): for instance, two individuals having the “same” physiological characteristics, some of which may even be unobservable or difficult to determine unambiguously (e.g., equal weight, height, and muscular and cerebral masses), may exhibit radically different cognitive and social abilities. The world’s stratification is addressed in section *World’s Stratification: The “Real,” “Actual,” and “Empirical” Domains*.

An entity’s powers are not necessarily activated or exercised. For powers exist irrespective of ensuing effects (i.e., the result of powers’ exercise). In other words, any power does not depend for its existence on the effects that is capable of generating, that is, the events that power can bring about (Fleetwood, 2001). The tautology that an entity does something because it has the intrinsic power to do so is thus avoided. Yet, though some powers remain intact when unexercised, others are likely to deteriorate if are not put to work, for instance, human powers to ride a bicycle or to speak a foreign language, respectively (Sayer, 1984).

Contingencies Affecting the Exercise of Powers. Powers of an entity can remain dormant to the extent that activation depends partly on – and ensuing effects depend heavily on – surrounding, enabling, or constraining conditions (e.g., spatial and temporal conditions, or presence or absence of other entities and even the exercise or inactivation of powers of those entities over time). Surrounding conditions impact primarily on the potential exercise of powers (and as a consequence, ensuing effects) but can also affect the nature of entities, for instance, somewhat contributing to structural change. Sayer (2000) refers to these conditions, both diverse and changeable, as “contingencies” or “contexts.”

“Tendencies”: The “Transfactuality” of Powers. Owing to the existence of contingencies (e.g., geohistorical ones), entities’ powers act “transfactually” inasmuch as the exercise of powers does not necessarily bring about events expected to ensue (Ackroyd & Fleetwood, 2000a). When a certain power is exercised, normal outcomes may be impeded to be brought about by certain contingencies, namely the exercise of counteracting powers (e.g., an aircraft with the “power” to fly can fail to do so in the presence of severe

atmospherical conditions). On the contrary, a power acts “factually” when effects are not deflected or countervailed by (the effects brought about by) other powers, for instance, when surrounding contingencies are somehow fixed (Fleetwood, 2001) – such constancy is impossible to ensure in an open world such as the social world, see section *Openness of the (Social) World*.

Effects resulting from the exercise of a power cannot be known a priori; nevertheless, scholars and researchers are usually able to identify that power’s tendency, that is, which effects that power “tends to” bring about (Sayer, 1984). Consider, as an example, power P_1 tends to E_1 and E_2 events. That P_1 has a tendency to bring about such events, however, is not tantamount to say that E_1 and E_2 will inevitably result. A power “(...) does not always bring about certain effects, but it *always* tends to. Hence, it acts transfactly” (Fleetwood, 2001, p. 212, emphasis in original). In case of hypothetical fixedness of particular contingencies (particularly those that are often conducive to the occurrence of E_1 and E_2), the power P_1 would not tend to but would surely bring those events about. One would be nonsensical if makes the claim that a power tends to a particular event “only if” certain contextual conditions are met. This realist conception of “tendency” is different from that of positivists for the latter employ “tendency” to connote the statistical character of certain (law-like) event regularities styled, for example, as “whenever event X, event Y tends to follow.”

Powers, when and if de facto exercised (under whichever conditions), bring about certain events. Resulting events, however, are not always the ones expected to ensue from powers’ activation (e.g., owing to counteracting powers prevailing). For instance, power P_1 , under condition C_1 (i.e., event E_2 owing to activation of power P_2), generally brings about event E_1 ; however, under conditions C_2 and C_3 (i.e., events E_3 and E_4 generated by P_3 and P_4 powers, and absence of E_2 , respectively), that same power P_1 generates event E_5 .

Causal Mechanisms and Configurations in the (Nondeterministic) World. The world’s events are codetermined, resulting from the convergence of countless and interconnected powers possessed and exercised by a myriad of entities, under a variety of mutable contingencies. Events and entities of the world are brought about because of several webs of interlocking “causal mechanisms” and “causal configurations” at work simultaneously. Sayer (1984) defines a causal mechanism as “the given way of acting of a power.” A causal mechanism exists whenever a few entities (and internal structures and powers) are interrelated and are as a whole

responsible for bringing about certain events, under particular contingencies; when those entities are vast in number (and the connection of structures and powers is far more complex), events are brought about by a “causal configuration.” Causal mechanism is an ensemble of powerful structures (i.e., entities). If causal mechanisms are themselves complexly interrelated, a causal configuration is thus operating (see, e.g., Fleetwood, 2007a; Hesketh & Fleetwood, 2007). The distinction between causal mechanisms and causal configurations is in essence one of number and complexity (of causal structures and powers involved) – and the latter encompasses the former, for a causal mechanism is merely a sub-, sub-sub or sub-sub-sub-causal configuration. For instance, one can look at the marketing department of a small firm (including a handful of highly competent individuals) as a causal mechanism capable of “generating” lasting business relationships with both suppliers and customers; however, a large multinational firm (endowed with an enormous amount of valuable resources and competences worldwide) is a causal configuration given that it is able to produce a high volume of throughput (of goods or services for customers) and profits (for corporate owners or shareholders).

Not only can one discover interdependences between causal mechanisms and configurations (e.g., strong or weak, strengthening or restricting), but one can also point out a hierarchy of causal mechanisms and configurations in the codetermination of the world (Fleetwood, 2007a; Sayer, 1984). Causal mechanisms and configurations should not be connoted with any kind of determinism – as, for instance, positivists frequently do when deploy the term “mechanism.” In sum, the world is governed by (or, more properly, is the outcome of) a diversity of cotendencies and countertendencies (brought about by multiple coexisting causal mechanisms and configurations), reinforcing or counteracting one another concurrently. See more on etiological assumptions of critical realists, in section *Scientific Research, Mostly of a Qualitative Character*.

Openness of the (Social) World. Since causal mechanisms and configurations may remain inactive and the effects of powers’ exercise are affected – reinforced or counteracted – by effects brought about by the exercise of other mechanisms and configurations (i.e., events’ occurrence is mediated by the influence of diverse contingencies), “what happens” does not exhaust “what could have happened” (Sayer, 1984). For Bhaskar (1986, p. 209), “[t]he world is not just the totality of what is actually the case, but includes what might or could be (...) as well.” Or, in other words, “[t]he actual is only a part of the real world, which also consists of non-actualised

possibilities and unexercised powers of the already existing structures and mechanisms that are transfactually efficacious (...)” (Patomaki, 2006, p. 9).

The world is not predetermined, that is, the world is not a closed system. Contrary to the determinism implied in general laws postulated by positivists (a consequence of cause–effect relations and constant conjunctions of events allegedly identified), the world is an open system (that includes many open subsystems). In such open systems (and depending on prevailing conditions), the same causal mechanism and configuration may produce different effects (under diverse contingencies); different mechanisms and configurations may generate the same effect; and event regularities, if exist at all, are at the very best transitory or spatially restricted.

Not only is the social world an open system, the natural world is also likewise, yet not completely (Sayer, 1984). Whereas no closed systems are found in the social world, very few can be discovered in the natural world (and even those systems are often not susceptible to human manipulation or control). Some “quasi-closed” systems – where one or several causal mechanisms and configurations are dominant, prevailing over others – can however be found in natural and social worlds. For instance, the relative constancy of throughput of a firm’s production process over time (attained via a set of intendedly created routines and conventions) can lead one to consider that firm as a quasi-closed system. It is possible to artificially design closed systems in some experiments of natural science (e.g., in physics or chemistry).

The openness of the world is corroborated by the world’s failure to meet the two conditions that would “close the system”: first, entities and structures and powers making up the world (or the intricate causal mechanisms and configurations governing it) are prone to change gradually or radically (e.g., human abilities to write, speak, learn, and invent change via instruction and socialization with others); and second, contingencies (affecting both the exercise of causal mechanisms and configurations and resulting effects) also change over time – this “external” change pertains to the modification of structures and powers of certain entities for these constitute themselves contingencies faced by other entities.

Sayer (2000, p. 95) points out four barriers to determinism in the world: “Firstly, whether causal powers (...) exist depends on the contingent presence of certain structures or objects [i.e., entities]. Secondly, whether these powers are ever exercised is contingent, not predetermined. Thirdly, if and when they are ever exercised, their consequences will depend on mediation – or neutralisation – by other contingently related phenomena. A fourth possibility is that natural and social causal powers themselves

(and not merely whether and in what circumstances they are exercised) can be changed.”

Despite the overwhelming evidence suggesting the openness of the world, positivists commit – often for the sake of “methodological convenience” – the mistake of treating the world “as if” is (or could be) closed. And to close the system of interest, positivists necessarily make unrealistic assumptions (e.g., the “*ceteris paribus*” or “*homo economicus*” in economics).

Critical realists even argue that (known) “falsehoods” or “fictions” are piled up by positivists allowing the latter to artificially engender the closure of the system of interest and evade the possibility of theory’s falsification (Fleetwood, 2002b). The artificial closure of systems entails performing “fictionalization,” not an abstraction as positivists claim. Abstracting is not equal to fictionalizing and the former by no means entails the latter (as seen in Section 3.3.3). “Ideal” or “fictional” systems designed by positivists do not approximate “real,” open ones.

And the knowledge arrived at in such contrived closed systems cannot be transposed as valid into open systems (Fleetwood, 2001). Doing that transposition implies committing the “*ignoratio elenchi*” fallacy because a point would be grossly neglected, namely the nonubiquity of constant conjunctions of events in (and the openness of) the world.

World’s Stratification: The “Real,” “Actual,” and “Empirical” Domains. Bhaskar (1975) notes that the world is stratified, as three different domains or strata can be identified: the real (or the “deep,” as many critical realists refer to it), the actual, and the empirical. Although the world’s entities – and the causal mechanisms and configurations that entities as a whole constitute – reside at the domain of the real (possibly being unreachable to human senses), the exercise of powers and the ensuing effects (i.e., events) can be observed or experienced only at the empirical stratum, thus being at the range of senses.

These three ontological domains are contingently related to the extent that the moves from the real to the actual and from the actual to the empirical (e.g., the exercise and manifestation of a causal mechanism, respectively) are possible but not mandatory (Ackroyd & Fleetwood, 2000a). All the observations and experiences made by scholars and researchers or by lay people (at the domain of the empirical) necessarily presuppose the exercise (at the domain of the actual) of powers or causal mechanisms and configurations (residing at the domain of the real), under particular contingencies (again at the domains of the actual and empirical). So, one can understand now why the operation of a causal mechanism may

be difficult or even impossible to identify empirically (and its effects difficult or impossible to observe or experience), when other (often countervailing) mechanisms are at work and the effects of the latter impede, override, or conceal the effects of the former (e.g., one attempts to open a door that is locked by key). The likes of Sayer (1984, fn. 42, p. 280) notwithstanding, the author does not subscribe to Bhaskar's (1975) view that causal mechanisms and configurations need to be either unobservable or less observable than the effects that are capable of producing (i.e., resulting events).

In short, a stratified, relational, and transformational ontology is presumed by critical realism (Fleetwood, 2001). Diverse and interrelated entities and heterogeneous events can be found (at different strata) within a layered, open, and evolving world. By contrast, empirical realist ontology of positivists conflates the domain of the real with that of the empirical, hence assuming that all that exists is inevitably at the range of human senses. As a result, positivists fail to see the distinction between a causal mechanism, its exercise, and the outcomes there. Positivism features a "flat" or "depthless" ontology (Ackroyd & Fleetwood, 2000a; Fleetwood, 2001).

3.3.2. *Epistemology*

"Concept-Dependence," but not "Concept-Determination," of the World. The world is what it is independently of one's identification (of it). The relation between objects and subjects (i.e., the world's constituents and scholars and researchers and even lay people, respectively) is contingent for objects exist regardless of any inquiry made on the former by subjects. Contingency notwithstanding, the world is "concept-dependent" for one can know it at length via available (both scientific and lay) discourses. One's access to the world, however, is partial and mediated. "[W]e cannot gain access to the world independently of the concepts we use" (Fleetwood & Ackroyd, 2004b, p. 3). One cannot step outside discourse to understand the world – such an Archimedean point is inaccessible.

The largely nonmaterial (i.e., social) world in particular is for the most part "concept-dependent." Social entities and events are intrinsically "meaningful," that is to say, what social entities and events depend strongly on what they mean to humans (Sayer, 1984). As a consequence, meaning is constitutive of the social world. Meaning is created within a language, through the "play of difference" or "sense-relations" among concepts – for instance, two terms being synonymous, antonymous, or heteronymous (Saussure, 1916 [1977]). The entities and events of the natural world, however, are intrinsically "meaningless" since what those entities and events are does not depend on what their meaning is. One is bound to have a single

and a double “hermeneutic” in natural and social sciences, respectively (Sayer, 1984): in natural science, one sees the construction and sharing of meaning only taking place within scientific communities (e.g., concerning natural entities and events studied); on the contrary, in social science, meaning is developed by and shared within communities of scholars and researchers and also within own objects of study (e.g., inquired social entities themselves).

That the world can be known (i.e., described and explained) at large through the use of human discourse – hence that there is no such thing as an “unmediated” or “neutral” access to the world – does not make the world a mere product of discourse. Although the world is largely concept-dependent, it is not completely “concept-determined.”

Descriptive and Performative Roles of Knowledge. The world is more than discourse, contra claims of most postmodernists. Even socially produced entities (e.g., concepts, models, or theories) have a remarkable independence from what scholars, researchers, or lay people think of, or say about those entities. “To acknowledge that most social phenomena are concept-dependent is not to imply, in idealist fashion, that they are dependent on concepts alone, for it takes more than thinking to produce social institutions and practices” (Sayer, 2004, p. 19, fn. 9).

All postmodernists who endorse a strong variant of social constructionism argue that discourse is all that exists (and as a consequence, that discourse ought to be self-referential). For strong social constructionists, the world as a whole is collapsed into discourse. By assuming the widespread existence of “wishful thinking” (both individual and collective), postmodernism equates “construal” of the world with the world’s “construction” (Sayer, 1984). Although construals may inform constructions (and constructions in turn may be construed differently over time), it is not the case that entities (as diverse as rocks, mountains, water, or social institutions) emerge or change simply because one chooses to discursively create or recreate those entities. For postmodernists, the “descriptive” (or “denotative”) function of knowledge is neglected almost in the same proportion that knowledge’s “performative” (or “constructive”) role is overemphasized. Since (real) referents are collapsed into respective (ideal) terms or concepts, the epistemic fallacy is again committed (Bhaskar, 1975). Strangely, both positivists and postmodernists commit the fallacy of conflating the world with human knowledge of it – the only difference being somewhat in the way that conflation is effected (Sayer, 2000). Positivists take the world as synonymous with what one is able to know

about (i.e., empirically observe or experiment), whereas for postmodernists the world is whatever one socially or discursively constructs.

Although mind-independent existence applies to both natural and social worlds, the latter is (as critical realists recognize) in part socially constructed. Human agency is to some extent a requirement for the social world's existence; yet this does not mean that the social world is merely the outcome of discursive human activities (Ackroyd & Fleetwood, 2000a). The world does not change simply because human discourse or knowledge of the world is somehow altered (e.g., racial discrimination is not eradicated when society changes discourse in favor of multiculturalism). Critical realists take this into account and are thus ready to accept a "weak" version of social constructionism.

Social World's (Partial and Mediate) Discursive Construction. At a given point in time, the social world is what it is independently of humans' conception, knowledge, or discourse. Social phenomena, though partly dependent on agents who create, reproduce, and transform them, generally exist regardless of all scholars and researchers interested in their study (Ackroyd & Fleetwood, 2000a).

The social world is only in part a deliberate construction of humankind, being usually not in accord with what human constructors would want the world to be in the first place (Sayer, 2004). Social phenomena, once constructed, gain an increasing independence from original founders, the agents responsible for phenomena's reproduction over time, and scholars and researchers who possibly inquiry phenomena. "The social phenomena that confront us today are mostly the product of [discursive and practical] activities carried out before any current observations we make, and while it is occasionally possible for researchers to influence [in the long term] what they study, the latter phenomena are mostly others' constructions, and not necessarily intended ones at that" (Sayer, 2004, p. 7, emphasis added).

The influence of human knowledge on the world is both potential and mediate, for that influence can never be effected and frequently occurs in the long term – something surprisingly overlooked by postmodernists. Only some knowledge claims prove influential enough to change de facto the world and even when that is the case, it is mostly past rather than contemporary knowledge that constructs the world. Knowledge is neither powerless nor all-powerful: knowledge is potentially causal, that is, capable to change the world. Contra postmodernists' idealism, knowledge alone does not modify completely the world (e.g., whenever knowledge is developed or revised, a "new" world is not created or reshaped ipso facto).

Critical realists recognize the performative role of knowledge, though noting that performativity depends on how knowledge is related to the (extradiscursive) world, that is, the knowledge's degree of "practical adequacy" (Sayer, 2004). Practice is to a large degree the link between knowledge and the world, as seen below.

Existence of both intra- and extradiscursive realms within the world is acknowledged by critical realism, in opposition to postmodernist and positivist standpoints that just take for granted the nonemptiness of the former and the latter realms, respectively (Sayer, 2000).

"Theory-Laden" Observation. In spite of the world's mind-independence (absolute in the natural world, relative in the social world), the human mind is not "world-independent." When one looks at or perceives the world, some sort of preunderstanding is always present (e.g., a frame of reference, conceptual framework, theory, or mere belief), though it is not often reflected on or even noticed. As Kant (1781 [1999]) reasons, "perception without conception is blind," whereas "conception without perception is empty." Human senses are inevitably "conceptually tainted." Critical realists assume that human observation is theory-laden or "conceptually mediated," instead of the theory-neutral observation postulated by positivism.

Knowledge, Practice, and the World. One understands the world (and develops knowledge of it) by observing, experimenting, and most importantly, practically intervening on the world. In addition to knowledge resulting from the world's observation and experimentation (epistemological means privileged by positivists), a great part of knowledge is obtained through both practical intervention in the world and human interaction and communication (Sayer, 1984).

The relation between knowledge and the world is not one of "correspondence" or "mirroring" involving the pursuit of (unsound) absolute truth. This relation is not merely contemplative or passive but rather interactive and characterized by (a degree of) practical adequacy. For knowledge, instead of aiming to be in positivist fashion a mirror of the world (i.e., "absolutely true at all times" or "true with a capital T"), needs to be to some extent "practically adequate." Knowledge, besides describing and explaining (hence enabling reference to) and constructing in part the world, informs and guides practice within the world. So, referential, performative, and practical functions of knowledge all need to be affirmed. Knowledge and practice are "reciprocally confirming" as each both

legitimizes and is legitimated by the other (Sayer, 1984). Given reciprocal confirmation, changes in knowledge and practice usually go hand in hand.

Inadmissible Judgmental Relativism. Despite accepting postmodernism's epistemic relativism, critical realism rejects judgmental relativism: though the world is largely known via discourse (i.e., necessarily under some description or from a particular perspective), humans can still assess which accounts (in general only a few) are more practically adequate than others. For there is always to some extent feedback from the world owing to human practical interventions within it (Sayer, 2004).

The "relativity" of truth upheld by postmodernists impedes (or at the least implies the suspension of) the assessment and comparison of practical adequacy of diverse knowledge claims and thus evades the possibility of claims' falsification. The idea that "anything goes" seems unsound for judging the practical adequacy of knowledge. This is in agreement with that humans do inevitably all the time in everyday life, to avoid undesired practical consequences, for instance, when looking for cars before crossing a road (Sayer, 1984). The common posture of postmodernists is to accept all knowledge as equally valid; yet some postmodernists take the alternative route that is to doubt all knowledge. This latter choice is mindless as well because, as Sayer (2004) notes, to be skeptical about a knowledge claim implies accepting the truth or validity of other claims used as grounds for that skepticism – that is, one cannot call into question everything. Critical realists take as a fallacy the postmodernist idea that unless one has "true" knowledge, one is only left with total absence of knowledge, or in other words, complete ignorance. The critical realist argument is that humans find themselves most of the time somewhere between these two poles.

Multiplicity and (Uneven) Fallibility of Knowledge. Theoretical pluralism is acknowledged and fostered by critical realists. Human beings develop multiple and unevenly practically adequate (and often contradictory) accounts of a "single" world, with all of those accounts remaining open to challenge. There is no indisputable knowledge, scientific or lay – though these two kinds of knowledge naturally differ (Fleetwood, 2005). All knowledge is fallible, but not equally so: treating all knowledge as equally fallible would be a mistake as dangerous as that of treating all knowledge as equally true. Critical realism is at odds with any kind of "foundationalism" or "taken-for-grantedness." "It is the [common] experience of the fallibility of our knowledge, of mistaking things and being taken by surprise (...)," as

Sayer (2004, p. 6) says, that lends weight to realist conviction. Ontological realism and “epistemological fallibilism” are two sides of the same coin.

The “relative” fallibility of knowledge is unrecognized by positivists that privilege scientific knowledge to the disfavor of lay knowledge. And postmodernists implicitly take all knowledge as unerring (because of knowledge’s performativity). Postmodernists try to distance themselves from positivists by endorsing relativist and in many cases, strong social constructionist viewpoints. But strikingly, postmodernists are prone to be as foundationalists as the ones they argue against. First, if discourse exhausts completely the world (i.e., wishful thinking prevails), then human knowledge ought to be infallible. For it is contradictory to accept the fallibility of knowledge while simultaneously acknowledging that knowledge is capable of constructing the world as a whole. Second, relativism allegedly promotes “open-mindedness,” eschewing any form of absolutism. By taking all accounts as relative (i.e., equally “true”), postmodernists have an excellent excuse to avoid any criticisms whatsoever (e.g., of an empirical character). That escape from counterarguments possibly contributes to the perpetuation of the status quo. In sum, a different kind of foundationalism is to be found within postmodernism.

The Objectives of Science. Critical realist science aims to understand or make sense of (i.e., describe and explain) the many-sided world one inhabits. The difficulties of making science stem not only from the multi-dimensionality and mind-independent existence of the world, but also from the world’s nonperennial nature (i.e., its never-ending, usually gradual yet at times drastic change).

Bhaskar (1998, 1975) notes the presence of transitive and intransitive dimensions in science. This means that science comprises (“ontic”) objects of study and (“epistemic”) resources that scholars and researchers employ to inquire those objects (e.g., theories, research techniques, and so on) – while the latter are likely to change continuously (sometimes even radically), the former endure (regardless of latter’s influence) though are not immutable. Scholars and researchers (and lay people) face stable but not static referents (i.e., the world) and develop references to (namely description and explanation of) referents, partly via stable but not static terms, models, and theories.

World’s Descriptions, Explanations, and (Tendential) Predictions. Science strives to discover the nature of world (i.e., entities’ powers, liabilities, and tendencies) and thus to increase human ability to explain the occurrence of

events (Secord, 1986). Scholars and researchers aim to develop robust yet tentative theories (i.e., descriptive and explanatory “causal accounts”) of extant causal powers, mechanisms, and configurations at work that are potentially responsible for bringing about inquired events (Fleetwood, 2007a). Critical realist scholars and researchers attempt to develop a “bird’s-eye view” on the phenomenon of interest, instead of the “god’s-eye view” pursued by positivists (Sayer, 2000). Critical realist research switches from the domains of the “empirical” and “actual” to the domain of the “real,” that is, from observed and experienced events to the entities and powers (or causal mechanisms and configurations) ultimately responsible for the former’s occurrence (Ackroyd & Fleetwood, 2000a). As Lawson (2001) reasons, critical realism stresses the need to “go back to reality.”

Whenever holding sound knowledge on the world’s causal mechanisms and configurations and on prevailing contingent conditions, scholars and researchers are often capable of assessing the “causal efficacy” of co- and countertendencies at work, hence possibly providing “highly qualified” predictions about the likelihood of the occurrence of certain events. So-called “tendential predictions” about the future, though not totally accurate, are certainly not of a spurious quality (Fleetwood, 2007a).

The outcome of the conflux of several co- and countertendencies prevailing is impossible to predict outrightly: “[T]he future (...) is real but not yet determined and therefore consists of a multiplicity of different possibilities (...)” (Patomaki, 2006, p. 29). Which of converging or opposing tendencies are more forceful and likely to prevail is a matter to be assessed empirically by scholars and researchers (Fleetwood, 2004). Against allegations of positivists (e.g., Hempel & Oppenheim, 1948), the maturity of any science is unrelated to its predictive power – for the openness of the world makes highly improbable the existence of such absolute power. Descriptive and explanatory powers of science (that can always be improved or extended) are much more adequate as epistemic criteria for evaluating scientific knowledge.

Positivists are only capable of offering predictions of a spurious precision and “emaciated explanations” at the most (Hesketh & Fleetwood, 2006, 2007). The phenomenon to be explained (explanandum) is logically deduced from both a universal regularity (commonly expressed in a law) and a set of initial conditions (explanans) – review the “logicism” of the deductive-nomological model used by positivists in Section 3.1.3. No explanation of what produces the phenomenon of interest is, however, given. Positivists confuse prediction with explanation (so-called “symmetry thesis”), the only difference between these two being in the occurrence of the phenomenon to

be explained or predicted: explain the phenomenon after its occurrence (what may also be called “postdiction,” i.e., to “predict” the past) or predict the forthcoming occurrence of the phenomenon, respectively (Fleetwood, 2002b). A prediction, even if accurate, does not constitute per se an explanation. Positivists offer for the most part “nonexplanatory” predictions and on occasion a few “nonpredictive” explanations.

Given the openness of the world (and the transfactuality of entities’ powers), events cannot be accurately predicted although underlying causes (i.e., causal mechanisms and configurations) can often be uncovered by scholars and researchers. Explanation supplants (tendential) prediction as the ultimate purpose of critical realist science (Fleetwood, 2001) – though the former serve as source for the latter.

Practically Adequate, Incomplete, and Revisable Scientific Knowledge. Science aims to develop an increasingly practically adequate knowledge of the world. Since scientific knowledge varies in epistemic status (being more or less practically adequate) and is necessarily incomplete and revisable, a great part of scholars’ and researchers’ time is devoted to assess and improve the degree of practical adequacy of that knowledge. This difficult but not all-or-nothing task of scholars and researchers adds up to “epistemic gain” (Sayer, 2004, 1984).

Incompleteness of knowledge claims is primarily justified by the world’s many-sidedness and continuous change, though also derives in part from the lack of knowledge on possible contingencies and the way these contingencies impact on effects resulting from the exercise of powers (even when there is knowledge about entities and causal powers, mechanisms, and configurations at work). Incompleteness can always be found in scientific work on account of “abstractions” that scholars and researchers make in research (i.e., “something” is consciously left out of descriptions and explanations) or deliberate and partial trimming of knowledge (for preexisting stock of knowledge possessed by other scholars and researchers renders unnecessary the completeness of arguments).

Context-Dependence of Scientific Knowledge and the Need for Reflexivity. Science is in part as a social, by and large male-dominated activity (Sayer, 2000). Scientific knowledge is to some extent socially constructed, being affected by social relations that scholars and researchers establish, develop, and maintain among themselves. Scientific knowledge emerges, thrives, and endures on the basis of negotiated consensus between theory developers and users, within respective scientific communities – sociology of science thus

deserves acknowledgement. Of course, this is not to imply – as postmodernists claim – that scholars' and researchers' interrelations are the unique (or primary) determinants in the development and evaluation of scientific knowledge, for intellectual scrutiny features eminently in that process.

All human knowledge (not only scientific) is partly a social construction. Knowledge is always “situated,” bearing the marks of its social origins and molded by the social background of knowledge's proponents, adherents, and even fiercest contenders (e.g., gender, race, personality, or personal values). One cannot assume the “context-independence” of knowledge (Sayer, 2000). Moreover, the form of produced knowledge also impacts on content. For critical realists, the deployment of metaphors and analogies in scientific knowledge is unobjectionable, as admissible as that of logic and even quantitative techniques. For example, in the industrial marketing and purchasing field of study, Easton and Araujo (1993) and Alajoutsijarvi, Eriksson, and Tikkanen (2001) both address the widespread use of metaphors in so-called markets-as-networks theory. Easton and Araujo (1997) go even further by suggesting that literary criticism bears resemblances with criticisms made by management scholars and researchers on own (and others') conceptual and empirical works – an argument that is not senseless if one reflects on the habit of referring to a particular body of theory as “literature” (Massey, 1996). Positivists, on the contrary, discard all kinds of nonlogical or nonmathematical reasoning in science.

The “context-dependent” character of knowledge makes “reflexivity” advisable, particularly with respect to scientific knowledge (Bourdieu, 2004). Reflexivity denotes all efforts to critically expose the social context in which knowledge is created, developed, and assessed. This is not to say that either *ad hominem* or *ad feminam* arguments (opposing the male or female making the knowledge claim, not the claim in and of itself) are admissible. To admit (enabling or constraining) social influences on any kind of knowledge is not an invitation to grant “epistemic authority” to the claims of an individual or group (whether dominant or oppressed).

“Situatedness” and (Tentative) Objectivity of Scientific Knowledge. That scientific knowledge is situated needs not threaten its objectivity, imply the absence of knowledge's practical adequacy or signal a relativist position. Science is never “value-free”; yet “value-ladenness” does not forego the possibility of aiming at objectivity in research and the scientific knowledge developed. Sayer (1984) exposes three meanings for the notions of “objectivity” and “subjectivity”: “value-neutrality” or value-ladenness of

knowledge, presence or absence of truth in knowledge, and that knowledge pertains to the nature of objects or to what subjects think of those objects. Scientific knowledge is both objective and subjective (in the third above-mentioned sense) for it is developed by subjects (scholars and researchers) about objects of study (the world). Although scientific knowledge is (like any other knowledge) “value-laden,” it is not necessarily “untrue” or subjective. Overly subjectivist conception of values is a prominent presumption of positivism.

It is not the case that one has either some “pure,” value-free, objective science or instead the complete absence of science, that is, “purely subjective” opinion, fiction, or fantasy. That knowledge claims are “epistemically relative” (i.e., partly shaped by social and cultural backgrounds) does not mean one has to accept judgmental relativism and thus assume that it is impossible to differentiate between “better” and “worse” (or more and less practically adequate) knowledge claims. For instance, one might know “something” about the significance of business relationships for the firm (see Sousa & Castro, this volume), without knowing that with absolute certainty and even without being able to explain every causal power, mechanism, or configuration possibly bringing that significance about. In this case, if one takes the decision to abandon what one does know about relationship significance on (pomo) grounds that one knows nothing at all, one would be abdicating own (mandatory) intellectual responsibility.

“Abstract” and “Concrete” Levels in Research. Critical realist research is undertaken at “abstract” level (of tentatively identified entities’ structures, powers, and tendencies, or causal mechanisms and configurations at work) or at “concrete” level (of prevailing contingencies and observed or experienced events) or at both levels (Sayer, 1984). At abstract (or “conceptual”) level, structures of entities as well as entities’ powers and tendencies or causal mechanisms and configurations that entities as a whole constitute, are all conceptually postulated.

Conceptualizations may be arrived at or only tested after being heuristically posited, and corroborated or altered via research undertaken at concrete (or “empirical”) level. Empirical research, while not absolutely necessary for identifying structures and powers of entities or causal mechanisms and configurations at work, is helpful in clarification of effects resulting from the exercise of those causal phenomena (given the presence of diverse contingent conditions). Critical realists substitute practical adequacy for truth as the key criterion for evaluation of scientific knowledge resulting from both abstract and concrete research.

Assessment, Extension, and Improvement of Scientific Knowledge. Contra allegations of many antirealists (not only positivists), critical realist knowledge developed is not tautological. Critical realists, in face of certain causal mechanisms and configurations at work (and possibly observed or experienced in concrete research), cannot justify the nonoccurrence of expected events (i.e., empirical “manifestation” of postulated dominating tendencies) with the argument that “some countervailing causal phenomena must be prevailing.”

To discover which of tendencies prevail (and which do not) at a certain contextual setting and point in time is an empirical (yet not necessarily easy) matter. Falsification of knowledge claims is not avoided by the appeal to countertendencies or counteracting causal powers, mechanisms, and configurations. If expected events are not brought about, scholars and researchers are impelled to develop knowledge on countervailing structures, powers, and tendencies, and most importantly, why these latter override the allegedly prevailing former tendencies (i.e., to say, the relative contribution of all postulated causal powers, mechanisms, and configurations to the generation of observed or experienced events).

Empirical evaluation is insufficient to verify or falsify once and for all scientific knowledge. All empirical research needs to be both “theoretically informed” and “theoretically informative” (Sayer, 2000). Critical realists thus endorse a spiral-like approach to theory and evidence in research: evidence accumulated by scholars and researchers is likely to react back on (initial) theory, possibly causing theoretical (re)evaluation and as a result the change, extension, or even rejection of that theory. For instance, after postulating the existence of a causal mechanism, scholars and researchers are urged to determine (empirically) if that mechanism acts the way it is supposed to act and does bring about the event that is to be explained.

Cross-Fertilizing Scientific Knowledge. Critical realists do not see scientific knowledge as composed of discrete analytical blocks. Any theory is difficult to delimit since it is not clear where to draw theory’s temporal and spatial boundaries of applicability (Dubin, 1969). In antirealist fashion, theories are “internally differentiated” but overlapping. One recognizes the heterogeneity of theories and argues: first, that theoretical cross-fertilization is not only possible but desirable also – for alternative theories are not in general mutually exclusive, emphasizing different and one-sided aspects of the world, and therefore, likely to overall enhance description and explanation of underlying causal powers, mechanisms, and configurations at work; and second, that almost endless intertheory disputes easily found throughout

science may be solved by drawing on theories' "areas of agreement." Both the existence of (strong and weak) connections among theories and the possibility of establishing and developing new intertheory linkages deserve acknowledgment. The development process of scientific knowledge is neither wholly continuous nor totally discontinuous, against respective claims of positivists and postmodernists.

The standpoints of scholars and researchers as well as espoused theories are not necessarily absolutely antagonistic or "incommensurable." "Incommensurability" of rival theories alleged by Kuhn (1970) or by his followers is an overstatement: "[W]here theories are in contradiction, that implies they have something in common over which they can contradict one another" (Sayer, 2004, p. 8). Synthesis, that is, the common outcome of cross-fertilization, is feasible. Eclectic understanding that is likely to result from synthesis, instead of (needed but insufficient) specialist understanding, needs further promotion in research (Fleetwood & Ackroyd, 2004b). Critical realism dispenses with "disciplinary parochialism" and its close relative "disciplinary imperialism" (Sayer, 2000). Some influential scientific knowledge produced is in essence inter-disciplinary (e.g., evolutionary views of the business world).

3.3.3. Methodology

Critical realism advocates that the object of study of any science should dictate the research method to employ – while acknowledging that the primary aims pursued by all scholars and researchers are the (tentative) description and explanation of the world's phenomena (Sayer, 1984).

Need for both Structural and Etiological Analyses. To attain science's primary aims, scholars and researchers need to undertake structural and etiological analyses of the world (Sayer, 1984). As a result of these analyses, structures, powers, and tendencies of the world's entities and prevailing contingencies can be described; and the ensuing events can be explained by appeal to causal powers, mechanisms, and configurations at work, respectively. Both structural and etiological analyses are typically qualitative and involve a process of abstraction that can be on occasion supplemented by the use of quantitative techniques (e.g., "variance analysis" largely favored by positivists). The deployment of any quantitative apparatus generally implies subscribing to assumptions (even if transitory or spatially partial) of closed systems and Humean causality. It is thus very difficult to reconcile qualitative and quantitative research methods on the same research.

Abstracting from (Features of) the World. Critical realists take abstraction (i.e., isolation in thought of a one-sided feature of a particular, multi-dimensional phenomenon) as the primary tool at the disposal of scholars and researchers. To focus on a particular feature of the phenomenon of interest (i.e., to abstract from all other, deemed irrelevant, features that together constitute that phenomenon) is a proper way to inquire the complex and many-sided entities and events of the world. Abstraction should not be confused with “reductionism” (i.e., to explain a many-sided phenomenon by “reducing” it to but one of multiple constituents).

Treating the world’s phenomena as “unidimensional” – a regular mistake committed by positivists – is not tantamount to abstract (Sayer, 1984). Nor should abstraction be confused with fictionalization (as in, e.g., neoclassical economics). Abstractions, namely analytical decompositions or “deconstructions” of the world, must be made very carefully (e.g., to avoid “dividing” what is indivisible or creating fictions). Recurrent abstraction from time is counterproductive for it implies the neglect of change (e.g., taking place within structures, causal powers, mechanisms, and configurations, or contingencies; Sayer, 2000).

Understanding the world, via systematic recourse to abstraction, proceeds as follows: by starting from the multidimensional world (and abstracting from all but one of its features), one is likely to grasp the unidimensional; then by effecting all the necessary abstractions to fully deconstruct the world’s multidimensionality; and, later on by combining or synthesizing the knowledge accruing from each of the world’s one-sidedness abstractions, to (tentatively) understand the many-sidedness of the world. Simply put, world → abstractions and abstractions → world. Even when all three steps are taken, one cannot be certain that scholars and researchers are able to develop a thorough understanding of the world (in part owing to its continuous and unpredictable change).

“Retroducing” and “Retrodicting”. In addition to abstraction, scholars and researchers are advised to employ in research both “retroduction” and “retrodiction” processes, whereby: causal powers, mechanisms, and configurations (capable of producing inquired events) are postulated; and previous knowledge of other causal powers, mechanisms, and configurations (e.g., knowledge produced at more or less “distant” fields of study) is brought to bear on the object of study, respectively (Lawson, 1997; Sayer, 1984). Retroduction (or “abduction”) is a mode of inference that, starting from a phenomenon of interest, enables the postulation of a structure, power, or tendency (or a causal mechanism or configuration) that may

account for the occurrence of that phenomenon. One can take advantage of Lawson's (1997, p. 24) insightful description of retroduction: "If deduction is illustrated by the move from the general claim that 'all ravens are black' to the particular inference that the next one seen will be black, and induction by the move from the particular observation of numerous black ravens to the general claim that 'all ravens are black', retroductive or abductive reasoning is indicated by a move from the observation of numerous black ravens to a theory of a mechanism intrinsic (...) to ravens which disposes them to be black." Retroduction thus displaces induction and deduction as preferred mode of inference. The use of induction and deduction, as heavily espoused by positivists, is insufficient for the development of robust scientific knowledge.

Science is in essence a creative, both individual and collective endeavor that makes extensive use of abstraction, retroduction, and retrodiction. Scholars and researchers develop knowledge of the world by: abstracting from (i.e., omitting) relatively unimportant aspects of objects of study; retroducting to (i.e., postulating the existence of) certain causal powers, mechanisms, or configurations that can be responsible for bringing about the events to explain; and retrodicting to some established theories and models (in own fields of study or elsewhere) pertaining to other structures, powers, and tendencies at work.

Scientific Research, Mostly of a Qualitative Character. Critical realist research is "intensive" or idiographic (Sayer, 1984). The preferential test for research is "triangulation," that is, the simultaneous use of diverse techniques (e.g., direct observation, interviews, documentary analysis, and action research). The knowledge developed in intensive research can be "generalizable" (e.g., to other phenomena taking place at a different space and time) – against the view of positivists that presume generalization to be property of extensive or nomothetical research.

Critical realists do not make an apology for the sole use of qualitative research. Mostly qualitative (but also on occasion quantitative) research techniques are employed by scholars and researchers in accord with the specificity of objects of study. Yet, critical realists explicitly reject the widespread (positivist) argument that only quantitative-based science is capable to supply robust descriptions, explanations, and predictions of the world. Mathematics or "mathematical formalism" is the dominant (nonstructural and nonetiological) language in positivist science, being in and of itself unable to provide any knowledge on (structures and causes of) the world (Sayer, 1984). The identification of a mathematical association

(e.g., a positive correlation between two events) needs not imply any causality – or alternatively, the absence of that association needs not entail the absence of causality (Fleetwood, 2001). Although being totally “blind” to causality, mathematics has some possible applications in research – for instance, whenever scholars and researchers want or need to represent quantitative effects ensuing from the exercise of an entity’s powers. Yet causality is an “extra-mathematical” content, imputed to positivist mathematical models or frameworks. In line with Fleetwood (2001), one argues that positivists often smuggle causality into mathematics.

Qualitative research is to be effected when one’s aim is the (tentative) disclosure of the world’s causality. Critical realists are aware of the perils of (trying to) quantify inherently qualitative, multidimensional, and (in part subjectively understood) evolving phenomena.

3.3.4. *Etiology*

Causality as Powers. Causality pertains to the production of change. “[A] cause is whatever produces change (...)” (Sayer, 2004, p. 17). Critical realists substitute the conception of “causality as powers” for “causality as event regularities or cause-effect relations” (Fleetwood, 2001). Against the positivist view, to explain a phenomenon is not to search for other (temporally preceding) phenomena but to unearth the former’s underlying structure, powers, and tendencies. Positivism is usually entangled in so-called “associational thinking” for assumes that what can go together must go together, thus mistaking contingency for necessity (Sayer, 2000). By subscribing to spurious cause–effect relations (hence confusing temporal contiguity with causality), positivists either commit the “fallacy of affirming the consequent” (given the antecedent’s occurrence) or enter into a “naive falsification” (i.e., assume that the consequence’s nonoccurrence implies the falsification of postulated cause–effect relation).

Critical realists are unable to grasp how the inductive inference – that succeeding events are connected via causality – can be soundly justified. As Sayer (1984) asks, how can a positivist vindicate the assertion that the (preceding) event X is the cause of (following) Y? Or, in other words, how can a positivist justify that the future will resemble exactly the past? This so-called “problem of induction” is first put forward by Hume.

All causes can be au fond discovered in the nature (i.e., structural properties) of the world’s entities and need not be observable or physical (Secord, 1986). Critical realists often cite, as an illustrative example, the claim that human reasons can be causes of (observed) events (Sayer, 1984). Reasons can drive human behavior but not in a straightforward manner: as

one knows, the same reason is able to generate different events while a same effect may be brought about by a diversity of reasons (Sayer, 2004).

For positivists, however, neither human reasons nor discourse can be causal. Positivists can be accused of being “naturalists” and “materialists” whenever argue, respectively, that the social world resembles the natural world and thus the former can be inquired and understood in the same manner as the latter (i.e., exclusively via application of quantitative research techniques and inductive and deductive modes of inference); and the world as a whole is physical and observable. In a rather extreme reaction to this positivist stance, postmodernists embark on a crude idealism and take discourse as the unique and fundamental cause of the world, neglecting altogether the existence of extradiscursive and nonmaterial causes.

In sum, critical realism recognizes that causes can be unobservable and immaterial (hence resistant to observation, experimentation, measurement, or quantification) and that an extramaterial, discursive part of the world exists (thus being only in part naturalist and materialist).

The World Is Multiply Caused. “[N]othing happens without a cause. (...) [W]e continue to regard unanswered causal questions as just that – not as proven cases of indeterminacy [as if ‘God plays dice’]” (Collier, 1994, p. 127). The world is an open system, being codetermined by multiple and interacting causes (review Section 3.3.1 on ontology).

Several and interrelated structures, powers, and tendencies somehow (causally) govern the world, irrespective of prevailing contingencies and (possibly unforeseen) events brought about (Fleetwood, 2001). Causality is therefore complex, that is to say, multicausality prevails in the world. Multiplex causality is difficult to unequivocally identify by scholars and researchers (let alone lay people) on account of three main reasons (Fleetwood, 2007a): several causal powers, mechanisms, and configurations can be at work simultaneously (and, as one acknowledges, diverse powers may bring about the same effects); some causal priority (or hierarchy) is likely to exist in the world for not all causes are equally relevant in the world’s codetermination; and the world is in part subject to the exercise of human agency (though this agency is not entirely capricious and is liable to change). Identification of the world’s causality may be further complicated by the fact that some underlying causes may lie outside of scholars’ and researchers’ primary field of study or specialization (Fleetwood, 2007a).

Critical realism dispenses with determinism and randomness advocated by positivists and postmodernists, respectively. Determinism is dismissed owing to the openness of the world and the existence of contingency and

change in it – one can often find path-dependence in the world’s change, that is, from the “past” and “other places” to the “now” and “here” (Sayer, 2000). Randomness, namely that “anything can happen anywhere,” is not a feature of the world. Whatever happens need not be what could have happened and is explained by existing entities and structures, powers, and tendencies (or causal mechanisms and configurations at work) and prevailing contingencies of the world.

4. CONCLUDING REMARKS

This paper draws heavily on the works of Sayer (1984, 2000) and Fleetwood (2001, 2004, 2005) and illuminating views of these two critical realists on metatheory in general and on critical realism in particular. Metatheoretical taxonomies devised by Ackroyd (2004, pp. 150–151) and Fleetwood (2007a, p. 3) also provide invaluable help in identifying the distinguishing assumptions of each metatheory discussed here.

Scholars and researchers build often implicitly on one of the three metatheories, that is to say, a distinctive set of assumptions concerning ontology, epistemology, methodology, and etiology: either take the world as a closed system wherein cause–effect relations can be observed or experienced (i.e., positivism); or instead consider the world to be socially constructed by human beings via discourse or interaction and convention (i.e., postmodernism); or acknowledge the largely mind-independence of the world, a world composed of multiple (complexly structured and powerful) entities and (structureless and powerless) events (i.e., critical realism).

Ontological, epistemological, methodological, and etiological assumptions of the above-mentioned metatheories are addressed exhaustively elsewhere (Bhaskar, 1998; D’Andrade, 1986; Fleetwood, 2001; Lawson, 2001; Sayer, 2000; Secord, 1986) and summarized in Table 1.

Each and every scholars and researchers should be made aware of and reflect on the appropriateness of own metatheoretical commitments, primarily by bearing in mind the object of study. For these (usually taken-for-granted) commitments have a huge impact on the research process and outcomes (e.g., theories or frameworks developed or empirical data collected). Consideration of underlying metatheories is likely to reduce greatly the possibility of being at cross-purposes (e.g., when criticizing an opposite theory or challenging contradictory data). Understanding of why substantive theories are adopted, refined, extended, or instead opposed to by scholars and researchers, is thus easier to attain. By bearing in mind the

Table 1. Basic Assumptions of Positivism, Postmodernism, and Critical Realism.

Metatheory	Ontology	Epistemology	Methodology	Etiology
Positivism	Mind-independent world; observables; regularities (constant conjunctions of events)	Knowledge development by observation or experimentation of the world; postulation of laws (via generalization); emphasis on prediction and objectivity	Use of quantitative research methods; deduction and induction	Cause-effect relations (deterministic or stochastic); closed systems
Postmodernism	World is built via discourse or social interaction and convention; multiple realities	World only known via discourse; no knowledge better than any other (relativism)	Use of qualitative research methods	Human mind as (arbitrary) cause of world
Critical realism	Largely mind-independent world; observables and unobservables; entities (with structures and emergent and potential powers and liabilities) and events; necessity and contingency (relations); world's strata (real, actual, and empirical)	Multiple, fallible, in part socially constructed knowledge (via intervention in the world); emphasis on description and explanation; tentential predictions	Use of qualitative research methods (triangulation); abstraction, retroduction, and retrodiction	Multiply caused world, brought about by exercise of interlocking powers, mechanisms, and configurations, under mutable contingencies; tendencies and countertendencies at work; open systems

points of departure in research, one is able to avoid inadvertent slides into ontological or epistemological incoherence (either over time or in a single piece of analytical work).

Finally, this paper has the merit of presenting in detail to a large audience (namely scholars and researchers of the industrial marketing and purchasing field of study, largely unaccustomed to explicit metatheoretical discussions) alternatives to the mainstream (positivist) conception of social science: postmodernism and especially critical realism.

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