A critical realist view of psychology as a science

by

David Jacobus François Maree

A thesis submitted in partial fulfilment of the requirements for the degree

D.Phil

in the Department of Philosophy at the

UNIVERSITY OF PRETORIA

FACULTY OF HUMANITIES

SUPERVISOR: Prof A Antonites

April 2017

To Marinda, Inandi & Maryke

ACKNOWLEDGEMENTS

My dear and loving family that patiently put up with this effort for some time.

My supervisor, Prof Alex Antonites, who expertly and quietly directed my efforts in the right direction. It is an absolute honour to have him as mentor, friend and supervisor!

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The early work of Bhaskar is critically evaluated as a possible philosophy of science for psychology. His Critical Realism reacts against both positivism in natural science and hermeneutics in psychosocial science. On the one hand, he proposed a Transcendental Realism against Kant's Transcendental Idealism. The former aims to avoid the epistemic fallacy and show how natural science is possible. On the other hand, Bhaskar investigated the possibility of naturalism in social science but he managed to merely strengthen a dualist ontology. A consistent Naturalist Realism ought to account for both modes of reality. It should be based on a unitary ontology and be able to show how epistemic access to both natural and psychosocial modes is possible.

In the study, a brief overview is provided to the development of psychology's image of science and how it is revealed in its struggle to unite science and practice. Its views of science and measurement are labelled as positivistic and usually social constructionism is considered as a viable alternative. An overview of positivism and its roots in empiricism is provided along with a discussion of Gergen's social constructionism. Scientific Realism, along with Semirealism, Minimal Realism and Situational Realism are examined to establish the principles of realism informing a Naturalist Realism. Before the viability of Bhaskar's philosophy of science for psychology is considered as a way to negotiate between positivism and constructionism, Kant's Transcendental Idealism is briefly discussed. Bhaskar's Transcendental Realism, what was later called Critical Realism, is evaluated against the Kantian implications for realism. The implications of a Naturalist Realism for psychology as science is then examined. Harré's discursive view of psychology and psychosocial reality provides a way of acknowledging the qualitative difference between modes of reality while holding to a concept of one (or naturalist) ontology.

It is shown that discursivity is ontologically grounded making debate, argumentation and criticism possible. In the case of science, discursivity becomes critical evaluation. Causality underlies the possibility of experience in both natural and psychosocial science. It is suggested that in the case of the latter meaning might have a causal function. The limitations of Critical Realism as a philosophy of science for psychology can be overcome by a Naturalist Realism by enabling a movement beyond opposing perspectives prevalent in psychology's image of science and methodologies, such as qualitative/quantitative and positivism/constructionism

CHAPTER 1 INTRODUCTION

1.1 Problem statement and aim

The question of the thesis in the light of the title, "A critical realist view of psychology as a science," is whether a Critical Realist view of psychology as science is viable. Underlying this question is the belief that a Naturalist[1] Realism as a philosophy for psychological science should be possible, given the following two assumptions: a) whatever there is proceeds from one reality and b) somehow epistemic access to this one reality is provided by both how reality and our minds (as part of this reality) are structured. Loosely formulated this means the following. Reality and everything within it evolved because of this one reality that exists.[2] Where, when and how minds, culture and the like developed is an open question but at least we know this: humanity as we know it developed these things and their by-products here on earth from somewhere in the distant past. Along the way things acquired meaning and as a few centuries of Western philosophy show it has been difficult to marry the psychosocial and natural worlds. However, the one cannot be without the other: we can think of a world without humans but not the other way around! In this thought lies one requirement for a Naturalist Realism.

Secondly, epistemic access to reality, or for lack of a better term, the different *modes* of reality whether psychosocial or natural, is much more difficult to work out except to say that we need to find a satisfactory answer that takes both sides of the coin into account, namely, the mind and external reality. Bhaskar's philosophy of natural and social science provided one answer to these issues, namely what reality is and how we gain epistemic access to it, especially in science.

Bhaskar's philosophy of science negotiates its way between two avenues proposing epistemic access to the modes of reality. The one, positivism, is a particular widely acknowledged avenue in natural science and in various quarters is seen as the received view of how natural science should proceed. The other, hermeneutics, Bhaskar regards as the standard approach for social science. The reason is its focus on meaning which is regarded as that aspect of psychosocial reality not managed and dealt with by natural science. Parallel views are reflected in psychological science.

---

[1] For an overview of naturalism see Clark (2016).

[2] I am taking my cue from the spirit of Morganti (2016, p. 82) discussion: "*I take the foregoing to lend further substance to the adoption of a naturalistic stance in the philosophy of science, and to the idea that the issue of scientific realism versus antirealism falls within the scope, and is in fact best inquired into from the perspective, a naturalized philosophy of science. First of all, scientific knowledge and the related cognitive capacities are in continuity with our everyday knowledge and cognition, so as to recommend a study of science and scientific theories as natural entities subject to natural processes. Additionally, both scientific realism and antirealism (and the agnostic third way traceable, for instance, in the work of Fine, which we mentioned earlier) are hypotheses to be evaluated, much like their scientific counterparts, on the basis of the form of reasoning that led to their formulation, their explanatory power, and their general connection with empirical (including historical) data.*"

Methodologists divide themselves in quantitative and qualitative camps, the one dealing with empirical matters and the other with meaning. A strong movement on the qualitative side is represented by social constructionists and one of their main arguments of why qualitative and constructionist methods should be followed is the fundamentally meaning-based nature of psychosocial reality. Bhaskar's Critical Realism is popular in psychosocial science and I am taking the opposition between positivism/empiricism on the one side and meaning/constructionism/hermeneutics on the other side as the two opposing forces he tries to reconcile.

Thus, one aim is to see whether Bhaskar succeeds and whether his Critical Realism can succeed of what I regard a Naturalist Realism ought to achieve, at least for psychological science. In the process, I would like to briefly describe the problem field and why I regard the positivism-constructionism opposition as problematic for psychological science. I refer to the development of psychology's scientific self-image, look at the views of one of the major proponents of social constructionism in psychology, namely Kenneth Gergen, and examine classical empiricism and how its tenets crystalized in positivism. The debates in psychology recruit realism as a form of positivism and I discuss two paradigm examples of Scientific Realism to accentuate the difference between positivism and what realism is supposed to achieve in natural and social science.

Bhaskar contrasts his philosophy of natural science with Kant's Transcendental Idealism and calls his own approach Transcendental Realism. For this reason I also look at Kant's epistemology and transcendental argument. The difference between Kant's and Bhaskar's ontologies are characterised as subject and object-sided because of the emphasis placed on what the mind contributes to understanding empirical experience. Over and above Semirealism and Minimal Realism, a much earlier version of realism, namely, Situational Realism of John Anderson is considered for its differences and connections with idealism, Kant and empiricism. Because of its close allegiance to Direct Realism which influenced the development of psychology at the beginning of the Twentieth century and beyond, Situational Realism's principles of one ontology, its object-sided epistemology and non-constitutive relations provides some assistance in correcting Bhaskar's wedge. The latter is so called because I think his apparent solution of a reconciliation between natural and social science fails: naturalising social science as he did merely serves to drive the *wedge* between the two domains of reality, natural and social, deeper.

Finally, I consider Situational Realism's implications for a psychology of science by examining the ideas of some of the New Realists and their heirs. Anderson's anti-idealism is strongly supported by both behaviourists and New Realist alike, and Gibson's Ecological Realism shows how difficult it is to acknowledge over-dependence on the categories of the mind as opposed to the object-sided structure of reality. Their rejection of representationalism and acceptance of direct realism along

2

with Anderson's anti-idealism goes too far in my opinion along with Bhaskar's epistemic fallacy. A Naturalist Realism calls for an equal subject/object-sided contribution to epistemic access.

Although the thesis touches upon issues such as the reality of psychological entities the idea is not to explore a philosophy of mind. Similarly, there are a number of issues I cannot address. However, I conclude with a discussion of discursivity as explicated by Rom Harré. He takes a constructionist approach to psychological reality although it is well-known that his natural science persuasion is realist. What makes his take on psychological reality valuable is that he was Bhaskar's supervisor. Bhaskar claims that discursivity is possible because of ontological difference. Anderson went much further by grounding discursivity, debate, argumentation and criticism ontologically in the possibility of differing from someone's claim about reality, namely, that x is y. Discursivity is thus possible because of a Naturalist Realist approach. The implication of discursivity as epistemic access to psychological reality is that meaning is placed squarely in the naturalist domain. Situational Realists argue that meaning can be sensibly studied by a realist scientific approach because things mean something to people and people can be asked about their experience of meaning. However, the naturalism I envisage goes further than this: Kant showed that the possibility of experience requires necessity (as do other versions of realism). Causality underlies the natural domain or as I want to call it, the natural mode of reality. However, it also underlies the experience of the psychosocial mode of reality because meaning makes people do things and this can be expressed and studied discursively.

1.2 Background

This study addresses the issue of Critical Realism and psychology and mainly whether Critical Realism can form an appropriate philosophy of science for psychology informing decisions about the reality of its phenomena and the applicability of its methods. Of course, one would like a metatheory that describes the actual practise of science accurately while fully realising that even scientists might have misconceptions about their theories and practices. A metatheory should, in a sense then, guide but also describe and above all, provide space for critical reflection on actual practices. A philosophical metatheory cannot determine the content of a science, in this case, psychology, such as proclaiming that infants have a basic numeric sense and so on. What it can say is that psychology, as a science, should have certain characteristics, although even such a claim cannot be made *ex cathedra*. From the start, one should realise that infallibility and certainty is beyond our reach, both for the scientist and the philosopher, although critical communication within each discipline and between disciplines is a real possibility.

In the study I have focused on questions that I would like to answer so that some issues probably fell by the wayside, and it might seem that I concentrate too

3

intensely on others. However, the study is guided by my own quest for answering some particular questions in the philosophy of science of psychology. I fully realise that a study such as this can escalate quickly given the nature of the question, but I have tried to limit the investigation to issues I thought would answer my questions.

Much of my deliberation on a proper metaposition for psychological science stems from a fundamental discomfort when listening to postmodern discourses about psychology, especially of the constructionist variety. Almost every textbook, most books and conference presentations legitimize a constructionist approach to psychology by characterising empirical psychology as positivist. Positivism does not deal with meaning, it requires measurement of constructs and meaning cannot be quantified, *ergo* mainstream psychology cannot deal with proper psychological experience and phenomena. Of course, I am oversimplifying, but this offhand dismissal of empirical psychology surely cannot be valid? I felt the rejection of empirical psychology cannot really be sensible given that scientific enquiry is actually taking place on a massive scale. The flipside is also true. One cannot, on the sheer bulk of its enterprise, view cocaine production as valid or morally defensible! Sometimes something is valid because it is being done, sometimes not, and my task was to unravel these issues in some way: when can psychology be said to be proper science, when should we listen to the constructionists and when are things really positivist? As will be seen in this study I think the situation is much more nuanced because realism also has something to say about and for constructionism, qualitative methods, about meaning and the so-called unobservables we struggle with in psychology.

The issues I address and the problem I want to solve might seem dated to the philosopher of science proper, and in a sense, they certainly are. The question of social constructionism and positivism has been addressed in the past by philosophers of science such as Kukla (2000), Hacking (1999) and Laudan (1996) and more recently by philosophers of psychology such as Hibberd (2005) (also see Morganti, 2016, pp. 79-80). However, when dealing with psychologists, academics and psychology in a localised context, that is South Africa, then it becomes apparent that we lag behind or even have slightly or more seriously different issues than the rest of the world.

When I started teaching research methods to students some years ago, these questions became much more pertinent. I was trained in statistics, psychometrics and empirical research methods and the clashes with postmodern views became much more frequent. I searched for a metatheory that could answer constructionism on its own terms, and it was only later that I realised that this debate has been raging for some time internationally. In fact, postmodern views, as I will mention later on, frequently informed critical positions in psychology against dominant psychological practices characterised by mainly white patriarchal male communities. Coupled with apartheid pre-1994, it is understandable that international and local opposition to

4

dominant practices was growing and culminated in a rejection of positivist-empirical psychological science and practices. Thus, facing discomfort with my own research in psychology, I started questioning the assumptions of my measurement theory, quantitative methods and general empirical approaches to investigating psychological phenomena. In this process, I discovered Roy Bhaskar's philosophy of science that provided me with an apparent avenue of negotiating between constructionism, on the one hand, and positivism, on the other. I thus decided to investigate how critical realism can inform a proper psychological science without throwing out the baby with the bathwater. Of course, Critical Realism was very much alive amongst critical psychology proponents, which I realised only when I embarked upon this study. Had I not been so set on saving my own interests, I would have come to a fruitful position much earlier. Although Bhaskar's position about natural and social science is well known amongst critical realists, his view on the fundamentally open nature of social reality and the impossibility of experiment in the social and psychological domain stymied my efforts to clarify empirical investigation in psychology. Thus, further reading and investigation were required to explore possible avenues around this conundrum. I was teaching experimental methods to students, preaching about uncovering causal mechanisms, shying away from positivist ideas in psychology but still could not legitimize or criticize Bhaskar's position on the nature of social science and reality.

Whilst reading about critical realism, I subsequently discovered John Anderson's Situational Realism through the Australian philosophers' of psychology writings (Mackay & Petocz, 2011a). Not so well known in mainstream philosophical circles, although some of Anderson's students became world-renowned, his take on realism provided me with a means of evaluating critical realism sensibly. I discovered that situational realism had much to say about precisely the conundrum I have encountered. The situational realists faced constructionism and its main proponents squarely, delivering, to my mind, devastating criticism to someone like Gergen's views (Hibberd, 2001a, 2001b, 2001c, 2001d, 2002, 2005). They also clarified the relationship between realism and positivism, and someone like Michell (1993, 1997, 1999, 2000, 2003a, 2003b, 2003c, 2005, 2008b, 2011a, 2011b, 2011c, 2012b, 2013) published vastly on methodology and its realist grounding.

One issue that bothered me for some years—not that I explicitly looked for an answer—was the shunning of mainstream scientific realists of Bhaskar's theories. Only occasionally did they mention his realism although Rom Harré was much more involved in Scientific Realism than Bhaskar (Harré & Bhaskar, 2005). Of course, one would expect Bhaskar's views to make an impression with the scientific realists given that he was Harré's student (Blaikie, 2007; Porpora, 2015, p. 28)! Critical realism gained some following amongst humanities and social scientists of various flavours, such as psychologists, economists, international relations and some sociological theorists (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998; Collier, 1998; Lopez &

Potter, 2005; Manicas, 1998; Sayer, 2004). However, Critical Realism was largely ignored by the main scientific realist fraternity. Mainly Uskali Mäki, as a philosopher of economic theory, started with Bhaskar's theory but ended up squarely within Scientific Realism, which focuses on the natural sciences. Without solving this puzzle of the realist domain demarcation, I am fortunate to be exposed to both situational realism and scientific realism. This brief interaction provided me with some material to evaluate Critical Realism and propose some principles for a metatheory of psychology.

1.3 Chapter overview

The problem I have started with can be focused by asking what it is that psychologists are studying? Like many social sciences, economics included, psychology studies observable and unobservable things. Constructionists warn against reifying concepts and question the reality of things, such as personality and personality characteristics, IQ or attitudes. These are some of the supposedly unobservables psychology has to deal with, although one can make a case that some of the unobservables are made manifest in certain behaviours. Thus, we have behaviour, which is observable, and we have psychological constructs that either exist or do not, but are mainly not directly observable. But what characterizes something as psychological? Is it behaviour, thinking, having beliefs and desires, perceiving, having mental states, brain states, having neurons firing or experiencing feelings due to hormonal discharges? When one interacts with other people, does it count as psychological or social? What about when talking to others, trying to convey meaning or verbalising the elusive experience of being conscious and aware?

The main focus is to find a viable *theory of science* for informing psychological science but also one that avoids the pitfalls of both positivism and constructionism. Bhaskar's Critical Realism fails to negotiate the way between these two positions adequately. I am suggesting the development of a Naturalist Realism that can account for the nature of psychological phenomena and indicate what would count as adequate epistemic access to these phenomena. The summary below follows the structure of the thesis.

(a) The development of views of psychology as science (Chapter 2)

Danziger (1990) indicated that since psychology's inception as a science, the particular aims and methods of the natural science of the day dictated popular and scientific views of methods and theory. Laudan (1996) warns against carrying over erstwhile expert views of what science is to current views. Accounting for the ability of scientific theories to progress, i.e. maintaining the validity of core entities while going through historical change is usually what philosophical theories try to achieve. However, Laudan (1996) says focusing on the aim of science throughout periods of change should be the actual target of our considerations. What people regard as the

6

aim of science might differ and one should consider the success of science with respect to its aim. Psychological science is not exempt from this process. What it regarded as its aim throughout historical periods of change differs from what we regarded as the aim of science now. At some stage it mimicked physics as its model of science while now we have other insights about what it needs to achieve as science.

Psychology evolved particular views of the individual, the role of experiment, the aggregation of group scores and their place within psychology. To a large extent these ideas overlapped with positivism, the aims of psychology at particular stages of its development and it was influenced by the social context in which it was practiced. Thus, the groundwork has been laid for those opposed against the hegemonic view of scientific method to advocate alternatives. Of the three broad streams in psychological research, namely, experimental, eclectic and constructionist approaches, it is the latter voicing a strong opposition to positivist science in psychology. This image of science was further strengthened by the views trainers and scholars have of the scientist-practitioner model prevalent internationally in psychological training. The model flounders on the perception of science as positivistic despite the enormous amount of psychological research done world-wide and the number of practitioners in the field. It might just be that most researchers are science theoretically naïve about being labelled as positivist, they do not care or they just accept this label.

(b)   Positivism and constructionism in psychology (Chapter 2)

In the debate between positivists and constructionists, realism is frequently recruited on the side of positivism. The difficulty of unravelling the issues between relativism (for which constructionist positions are responsible) and realism/positivism is illustrated by the famous Loughborough debate between relativists and realists, each of whom maintains versions of constructionism. In the constructionist/relativist arsenal are issues such as essentialism and the quantitative imperative. Anti-essentialism means that things in nature have something that determines their nature. Depending on how strict one wants to be about anti-essentialism it can range from an acknowledgement that some things can be labelled otherwise to a wholesale rejection of any essences. The latter easily happens in the psychosocial domain. Thus, there is nothing in nature that determines what something is or should be. As an example: gender cannot be binary; its binary nature or essence was socially constructed. Categories of classification depends on us, not on things and in this sense, social constructionism is essentially idealist. It is a short step from denying essences to maintaining relativism.

The quantitative imperative is another major issue for both sides of the debate: measurement is widely regarded as the hallmark of science but some realists such as Michell (1999) denies this. Some things one cannot count and requires a different

7

method of analysis and interpretation than measurement. The ubiquity of the quantitative imperative does science as an enquiry-based enterprise a great disservice.

(c)   Empiricism (Chapter 3)

Classical empiricism Locke, Berkeley and Hume each provided an answer to how knowledge of reality is established. Locke rejected innate knowledge and held that all knowledge can be reduced to experience, whether external experience caused by external sensations (such as perceiving), or internal sensations (such as feeling). Ideas (or concepts) play a role in both thought (introspective experience) and sensation (external experience). Locke's version of empiricism wants to deny the innateness of some of the conceptual material and knowledge the rationalists assumed to be part of the mind's constitution, but he wants to show that thought and its operations can be linked to external sensations by means of ideas (or concepts and precepts) (Winkler, 2010, p. 47). Everything required for the mind to understand is thus given by experience. According to Winkler (2010, p. 46) Kant clarified Locke's vague usage of idea by referring to ideas as representations. Hume viewed ideas as the less clear counterpart of sensations or the direct impressions of sensational experience. Importantly Kant then distinguished between three types of representations, namely, (a) intuitions (*Anschauungen*) or a representation with a direct relation to its object, (b) concepts (*Begriffe*) or mediate presentations of objects (Winkler, 2010, p. 46) and c) ideas (Ideen) that are Platonic concepts beyond experience. Hume made a distinction between clear and distinct sensations and ideas which entail concepts about the sensations. Knowledge need to be traced to its simple sensations. An important contribution of Hume was his denial that concepts such as necessity and universality can be empirically grounded.

(d)   Positivism (Chapter 3)

Positivism and its variants from Comte to the logical empiricists have some common principles amongst others maintaining the importance of empirical experience in establishing facts or knowledge. Despite the commonalities the views of Logical Positivists differed on a number of points. Carnap differed in his views from other Logical Positivists despite them known as the Vienna Circle. The Logical Positivists initiated a linguistic turn and in their delineation of language as formal and material (Carnap) or structure and content (Schlick) they tried to distinguish between the subjective and observational aspects of what constitutes knowledge of reality. They solved the problem of the subjectivity of meaning by externalising it: language needs to be reduced to empirical, i.e. observable, simple units and only then these expressions of fact are meaningful. Their empiricism extended to causality denying things such as unobservable mechanisms. Their solution was to formulate laws expressing the patterns of things display.

(e)   Constructionism (Chapter 4)

Kenneth Gergen is a prominent advocate of Social Constructionism and he reacted consistently against the empiricist and positivist image of science which he regards as the received view. Situated within the post-positivist linguistic turn Social Constructionism emphasises the central role of language in constructing reality for communities of people. Social constructionism emphasises the constitutive nature of social communities in forming the identities of individuals. Individuality and subjectivity is denied to a large extent locating the individual with society and language. Gergen emphasizes the discursive nature of reality and calls for an alternative way of doing psychological science in contrast to the scientistic version, namely positivist, emphasis on measurement and control, experimentation and so on. The social nature of the psychological requires an alternative mode of investigating on par with how that particular reality is constructed, namely, through language and discursively. Epistemic access to psychological reality is gained though meaning and discourse. Gergen has a peculiar view of natural reality — he does not deny the importance of getting the mechanics right for getting to the moon or trying to save a person's life though medial science, but calls the realities they work with alternative discourses: engineers at NASA need to call a spade a spade otherwise their attempts to launch rockets will fail.

Gergen denies subjective idealism, the position critics of Social Constructionists accuse them of. However, everything that there is can be, through language, be described otherwise. Gergen says that we can easily describe a world where gravity does not play a role. Indeed we can — our discursive reality can be constructed differently from the one that we are used to. This is the point of trying to understanding cultural differences and in a sense on the level of description such a social constructionism is relatively trivial. We may even concede that what people regard as real, such as a flat world or a rising sun, are real to them. However, marrying nonessentialism with discursive processes stimulates the slide to serious relativism, subjective idealism and solipsism.

Gergen also distinguishes between a natural and psychosocial world where different rules apply, namely determinate causality vs. freedom. He holds the usual objections against the received view of science, namely, predictability, and objectivity, quest for laws. These issues cannot be applied to psychosocial phenomena because human nature is indeterminate and based on the generation of meaning. One can appreciate his insights on the social development of science, the criticism of the primacy of the individual or knowledge atomism and even unseating the hegemonic authority of the scientist. However, his placing "real" knowledge in the hands of the populace is precisely what Bhaskar criticises when he takes on Winch and the primacy of the empirical data of the social community. This privileged insider knowledge

merely establishes the boundaries for an inverse hegemony. The group's data or understanding is now more authentic and valid than the individual's.

(f)   Realism (Chapter 5)

To clarify how realism differs from the "received" view of science, namely its empiricist variants, a brief overview of Scientific Realism is provided. It is the most prominent version of realism in the natural sciences with some applications in social and economic sciences. Chakravartty's (2007) Semirealism is discussed as a position responding on issues Structural and Entity Realism with accounting for anti-realist arguments. Semirealism accounts for both the reality of relata and relations, and holds that first order structures are real. Explanatory mechanisms reside in the properties of relata, thus relata cause other things to happen. The ontology of Semirealism firmly maintains the mind independence of things that exist and also acknowledges the realness of unobservables provided they comply with two criteria, namely, the ability to detect them and to manipulate them to do other things (Hacking, 1983). Causality is thus a fundamental principle underlying the reality of unobservable things and their structures. Semirealism accounts for the stability of core elements in a theory when theories change.

However, Scientific Realism is not usually applied to social and other sciences. Mäki is one Scientific Realist that accepts the tenets of realism and applies it to economic theory. He acknowledges the difference between the realities being investigated in social science, economic theory and natural science. In order to provide a minimal application for realism in social science he proposes relaxing some of the principles of realism such as mind-independence and unobservables. However, he also proposes a particular view of modelling phenomena and systems that might be profitable for explanation outside of the natural sciences. Importantly, his view of modelling is based on the assumption of causality underlying the socio-economic sphere.

A lesser known variation of realism originating from John Anderson working in Australia in the 50s and 60s is discussed as it provides epistemological and ontological principles pertinent to the natural-psychosocial division of reality as well as allowing an ontological grounding of knowledge and science avoiding some of the pitfalls of positivism and constructionism. Anderson's Situational Realism avoids empiricist reduction of facts to atomistic simple units, regards what happens in reality as complex, causality is not something singular and linear, avoids idealism at all costs, regards reality ontologically as one, and the roots of all knowledge, science and argumentation in the ontological claim that x is y. The implication of Situational Realism's avoidance of idealism is rather radical: the Kantian categories are ontological and what we know, perceive or understand is reality per se and not mediated by representations. Thus, understanding of how things work is based on

10

the principle of non-constitutive relations. Subject and object remains distinct and independent along with the relation but never can the one or the other along with a relation constitute either subject or object. The implication for constructionism is clear: the mind cannot in any way contribute to constituting reality.

In a sense, Anderson's principle of non-constitutive relations is paralleled by Kant's possibility of synthetic a priori judgments. Knowledge of the world that is worth something can only be obtained synthetically: if a predicate was somehow contained in the subject it would have been analytic and thus trivial.

(g)   Transcendental Idealism (Chapter 6)

Kant investigated the possibility of metaphysics by examining the capability of the mind to know reality. Classically, metaphysics is concerned with objects beyond experience such as the existence of God, morality and so on, but all metaphysical claims assume the principles of necessity and universality. Kant did not want to commence dogmatically (hence Hume's awakening him from dogmatic slumbers) from assuming the existence of these objects beyond experience. Kant started with the conditions for knowing rather than with the objects themselves and in his Critique he established the possibility of synthetic a priori metaphysical knowledge such as the principles of necessity and universality (Anderson, 2010, p. 92). These principles underlie the possibility of experience so they are synthetic and they can be known a priori. The possibility of experience depends on these synthetic a priori principles. Metaphysics as science is possible but in a restricted sense: it cannot move beyond possible experience:[3]

The empiricists showed that knowledge needs to be derived from the senses but Hume's scepticism established that necessity is nothing more than psychological habit. Necessity cannot be derived empirically, nor logically, i.e. Hume showed that necessity cannot be derived from observing event A following event B or that it is logically or conceptually inherent in either A or B (Winkler, 2010, p. 66). Thus, not necessarily denying the importance of the concept of necessity, Hume assigned it to habit or custom. For Kant Hume was on the right track but the answer cannot be found in an empirical deduction but in a transcendental one (Winkler, 2010, p. 66). Kant showed through his transcendental method that principles such as necessity enables possible experience: thus, certain cognitive structures are required for experience but valid knowledge can only be synthetic. Thus, valid knowledge is synthetic but made possible by the a priori categories; transcendental idealism is

---

[3] *"Such principles (e.g., "Every event has a cause"; "Substance persists and is always preserved through change") are supposed to explain and guarantee the possibility of experience in general, so they precede it and can be known a priori"* (Anderson, 2010, p. 92).

required for valid knowledge, and because of its a priori requirement it can be called a subject-sided transcendental perspective.

What does the empiricist departure and Kant's corrective contribute to science? The empiricist grounding of knowledge in sensation or empirical reality is definitive: reality cannot harbour unobservables but what is the place of the human mind or cognition in all this? Kant showed that cognition is required but restricted to experience. According to Winkler (2010, p. 70) *"… the thesis of category-dependence can be restated as follows: the objective reality of empirical concepts depends on the objective validity of the categories."* Again the subject-sided nature of even empirical realism is emphasised.

(h)   Transcendental Realism, the possibility of naturalism in social science and criticism of Bhaskar's philosophy (Chapters 7,8 and 9)

Bhaskar deliberately constructs his theory of science as transcendental realism as opposed to Kant's transcendental idealism. Positivism and empiricism in their various guises are restricted to a first level of experiential reality, i.e. to the level of pattern and regularity observation where the majority of scientific work is done. However, transcendental idealism goes a step further by postulating imaginative generative mechanisms, whilst it is only the transcendental realist that goes on to test for the reality of these generative mechanisms. He thus, restricts Kant's conceptual work to the cognitive work done for imagining possible mechanisms. In a sense this restriction which Bhaskar sees as idealistic is a watering down of Kant's contribution to the understanding of how concept and experience contribute to scientific judgments in order to gain epistemic access to reality. Bhaskar does not really explore the Kantian possibilities for realism but then again Bhaskar has to fulfil his own programme moving from experience, actualism to realism or as he calls it a depth ontology: science consists of a vertical movement uncovering generative mechanisms. Clearly, the conceptual role of the scientist is acknowledged in uncovering generative mechanisms, but also the definitive role of experience in terms of constructing experiments, namely, effecting closure and thus control where the scientist can trigger causal mechanisms to reveal themselves by their causal effects. The fundamental problem for Bhaskar with Positivism is its Humean definition of causality namely, a constant conjunction of events.

Bhaskar's departure point is a transcendental argument asking about the possibility of science. Given that it does take place, how is it possible? His three-stepped process of scientific activity is his answer to the transcendental question, and its culmination in discovering mind-independent generative mechanisms grounds realism. Even though the term "critical realism" caught on I think the label of transcendental realism fits his version of realism well even after Bhaskar's attempt to naturalize social science and in principle psychological reality. One should notice that

his work on social reality and science changed the transcendental argument from the possibility of science per se to the possibility of naturalism in social science. I do not want to say that he inadvertently defines science as natural science or with the possibility of closure and experiment but this certainly seems to be the implication. The principles from a transcendental realist view of science, namely, the possibility of closure, experiment, enduring mechanisms, a depth ontology and so on are applied to psychosocial science. However, he acknowledges the differences between social and natural reality, namely social science is fundamentally concept dependent, relatively enduring but in essence open! Thus, what he worked so hard to establish as transcendental realism cannot be transposed or applied to the psychosocial domain. Psychosocial reality is dominated by the constitutive nature of the social, and the interwoven nature of the mind trying to understand its own constructions. His realism fully acknowledges the mind-independence of a realist ontology or as he calls it the intransitive domain; he also calls the productive work of a community of people, amongst them scientists, the transitive domain. Thus, knowledge, cultural products and other sociological artefacts are the fallible intellectual products of people experiencing, knowing and speaking about their reality.

The concept dependence of intellectual work about the intransitive domain makes it fallible, corrigible and revisable. It lies on the same level as imagining generative mechanisms but then tested empirically in the case of natural phenomena as in experimentation, but as explanatory models in the case of psychosocial phenomena. Bhaskar emphatically avoids the epistemic fallacy, namely the fact that what the mind is capable of should determine what there is. Epistemology cannot as in Kant's case, precede ontology; it is only in scientific work that the order is reversed. The precedence he gives to ontology above epistemology begs the question of how one should derive the nature of reality without engaging with it epistemically. His transcendental argument postulates the structured and differentiated nature of reality as enabling the practice of science which also boils down to assuming principles such as necessity and universality exist otherwise experience (and scientific experience) cannot be possible. Thus, Bhaskar does not move beyond Kant's Transcendental Idealism in a fundamental sense of relating conceptual work and empirical experience differently than Kant did. The problem shows up especially when dealing with a concept-concept dependent level of reality. Bhaskar merely deepens the nature-psychosocial divide although I agree that naturalism in the psychosocial domain ought to be our aim.

(i)   Psychology as science (Chapter 10)

Psychology is defined as a science focus on the psychosocial domain and the natural domain and in both the search for laws and regularity is prominent. This division reflects the assumptions of the transcendental argument namely categories residing in the mind and/or externally. That such a broad definition cannot satisfy

what we understand as science was illustrated with for instance the mythic image of psychological science constructed in the nexus of scientist-practitioner views of psychological training. Put simply, the natural side is undergirded by a positivistic view of empirical science whilst the psychosocial side should be studied from a perspective of social constructionism and meaning expressed in language.

(j)   Externalism in psychology: the New Realists (Chapter 10)

The New realists, essentially a movement in psychology at the start of the 20th century, eschewed idealism in psychology especially representational or the idea that we have double objects to deal with in perception and of course that the mind dictates what is real. Gibson's ecological realism is perhaps the best known representative of direct realism in psychology, i.e. that the external environment is sufficiently structured. The implication of a structured environment is that human behaviour provides sufficient information for meaningful understanding without denying the existence of the mind and consciousness. However, Manicas, as an example, denies that psychology is a science of behaviour! According to him the psychosocial and the natural domains cannot be reduced to each other, thus the psychosocial should be studied on its own terms. This is Bhaskar's result as well. Manicas sees the psychosocial as independent of the biological (natural) but conditioned by it. The same goes for the psychological - it is formed by the cultural and social. Manicas comes to the same conclusion as Bhaskar, i.e. the fundamental openness of the psychosocial domain and the difficulty of conducting experiments therein.

(k)   Discursive reality (Chapter 10)

Harré, a realist in the natural domain but constructionist in the social, has his own unique way of relating the psychosocial and the natural domains. One such move is to maintain the realist assumption, also found in Bhaskar, of powerful particulars. In the natural domain, and along with SiR's non-constitutive relations, powerful particulars make sense: in some way there are simply things that cause other things. However, Harré extrapolates this view to the agent or the person as powerful particular beyond whose expressive act nothing else except the biological lies. A discursive psychology is thus the only valid way of investigating the psychological. However, note that Harré's expressive and discursive reality boils down to a different sort of externalism. In fact, we cannot see into the minds of others and all we have is meaning constituted in the acts of discourse and expression. Harré and other social constructionists just went one step further than, for instance, Maze and the other New Realists by acknowledging acts of expression or behaviour that ends in communicating meaning as the real level of psychological reality! Harré even avoids idealism or representationalism and his position reflects that of Manicas' view of cultural and biological conditioning of the psychological.

Discursiveness does not explain meaning, it expresses it; acknowledging meaning as real does not imply it is concrete, an unobservable or a power. However, we know that the meaning narratives has can change individuals, communities and society. But let us take step back: is meaning internal or external? Does it reside in the mind or in objects? According to the constructionists such as Harré it resides in language and discursiveness, or in the external acts of communicating, thus not in the mind, at least not in the individual mind because the community or the social is primary (Gergen). Harré provides a plausible account of a possible process of how the social conditions the psychological in order to get to the point of expressing meaning. According to Harré we have discursiveness as the psychological, and the biological. The agent as powerful particular does not have deeper psychological levels to account for surface behaviour. As soon as we seek something deeper it amounts to the metaphorical otherwise we jump right into the neurological.

While Bhaskar denies psychosocial reality the possibility of experiment due to its reality being fundamentally open, Harré says measurement of so-called psychological constructs is impossible because of the discursive nature of the psychological beyond which there are no other things to measure. Both authors display their perceptions of what science is (possibility of experiment and measurement) and its inapplicability to the psychosocial. I am not convinced that that either the possibility of experiment or measurement are definitive hallmarks of what science is. According to the arguments of Michell a realist (which he defines as empirical realist but it means something different than Bhaskar's term) science does not regard the measurement imperative as a *sine qua non* for its work: it is a method of discovery and along with experimentation (or rather the possibility of closure) a way of providing epistemic access to reality being studied. Although some authors of the constructionist variety regard normativity and rules as the replacement for causality in the natural domain, I think an argument can be made for causality (and maybe other principles such as universality (and maybe other principles such as universality and related principles) as necessary for the possibility of experience whether experience of nature or the psychosocial. Therein lies naturalism that forms the basis for a unitary ontology, namely, causality enabling experience.

As in the natural domain, anything might count as a cause, from reasons, hormones to meaning. I also have no objection to seeing the psychological as discursive although one must point out that both Gergen and Harré provide meaningful structures enabling one to understand something such as identity. Discursivity does not imply not enduring, non-categorizing, unstoppable fluidness or chaos and lack of meaningful structure! By taking the given not for granted and pointing out alternative accounts for claims of what is, the avenue to the possibility of difference is opened and thus discourse. We can thus extend naturalism to discursivity as well: it need not be verbal but can also be expressed in the methods natural scientists use. Discursivity becomes critical enquiry when we move from

15

psychosocial processes enabling everyday knowledge to scientific approaches challenging that knowledge or claims.

1.4 Technical issues

I need to note a few technical issues with regard to the formatting and related matters of this thesis (mainly to remind myself). I have used mainly the APA 6th guidelines for citations and the reference list (American Psychological Association., 2010). Occasionally, some deviations occur but the deviations were consistently used throughout. Numbering of paragraphs and sections followed the following guideline: 1 for Chapter Heading, 1.1, 1.1.1, 1.1.1.1 for levels two, three and four, and (a) for level 5. Numbered lists were indicated with (a) for the first level and (i) for the second level. Numbered lists always start with a new paragraph. All normal paragraphs start with an indent, while numbered lists have no indent for paragraphs.

Footnotes are normally used for supporting quotations, remarks to myself, or reflections on the text.

I have, as far as possible, utilised page numbers for each and every citation as to ease checking and pinpointing sources, contrary to the APA Guidelines (American Psychological Association., 2010, pp. 170-171). I have no idea how a student manages to keep track of references and citations without page numbers and I pity the poor supervisor who needs to check the quality of unpaginated sources.

From this point on, all variations of realism and related positions are indicated by capitalised letters, e.g. Critical Realism instead of critical realism. The nouns indicating positions are usually abbreviated, such as Critical Realism (CR), or Situational Realism (SiR), and so on.

Quotations are indicated within double quotation marks and italics. A quotation with more than 40 words is blocked in a separate paragraph. Verbatim quotes are italicised but when I use examples or statements that are not verbatim, they are only indicated within quotation marks and not italicised.

CHAPTER 2 POSITIVISM AND CONSTRUCTIONISM IN PSYCHOLOGY

2.1 Introduction

This chapter provides an introduction to how psychology's scientific image developed and contextualises the problem of positivism and constructionism in psychology. It is a self-image and an image. Psychologists in the field and in training, both as researchers and practitioners, have a positivist understanding of scientific practice. As will become clear, constructionism reacted vehemently towards the received view of science in psychology raising amongst others the issues of essentialism and measurement. The struggle to uphold the scientific-practitioner model in psychological training reflects the conflict between constructionism and positivism. Unfortunately, realism is drawn into the debate, often conflated with positivism.

2.2 The development of a psychological science image

2.2.1 Nineteenth century

The history of psychology as a science can be traced from various perspectives (Chung & Hyland, 2012; Heinämaa & Reuter, 2008; Kusch, 2005). One particular view point is that of Danziger (1990) who interpreted the history of investigative psychology as a history of constructing the subject of psychology in a certain way. Danziger's version was chosen due to its critical take on what lead to psychological science and he captures the sense of urgency of seeing psychology as science. In the end, his account provides us with a reasoned and critical account of how and where we went wrong. It exposes the false image of science we harbour and carried forward in numerous traditions to this day.

The development of psychology as a science and practice must be seen as the result of a number of interacting forces. The different views of psychology developed against the background of socio-historical events and demands. In the early days of psychology's development, approximately the 1800s, it had to distinguish itself from various forms of quasi-psychological quackery and religious practises. Thus, to ensure its own credibility in the eyes of the public a number of strategies were utilised by psychology. Psychologists had to establish themselves as experts and knowledgeable. Danziger (1990) regards the claim of a particular segment of society of having specialised knowledge as one of those typical strategies to establish a position of power. The implication is that another segment of society is dependent upon the so-called high priests of knowledge and is, thus, at the lower end of the power-balance scale. However, this particular social arrangement between investigator and subject was not always disparate.

On the one hand, psychologists had to legitimize their enterprise with the public and in doing so had to legitimize their science with their natural and other sciences

peers. To be regarded as authoritative by the public, psychological knowledge had to be scientific meaning it had to be dished up as numbers. Numbers have a scientific quality and, in a sense, provide some mystique to it because they are not readily accessible to an ignorant public. The quantification of psychology also legitimized itself as science in the eyes of the other established sciences.

2.2.1.1   Method of investigation

In his investigation of the history of psychology as a science, Danziger (1990) distinguished between the context of investigation and the context of application. The context of investigation comprises the socio-historical and other factors within which the psychological investigation was done whilst the context of application comprises the target audience of application. The investigative context within empirical psychological research (such as quasi-experimental, experimental and field research) is usually acknowledged to have an influence at least on participants, which means that psychologists are not all that ignorant of contextual influences on investigations (Danziger, 1990, p. 8). However, the psychological investigation must be seen as taking place within a pervasive social context, i.e. both respondents and researchers form a social context that is not necessarily accounted for in the investigative context. For example, despite the awareness that the reliability of a test is influenced by a number of factors, the provision of standardised instruments misleads researchers to think that testees react "…*only to dead materials presented to them and not to those who did the presenting*" (Danziger, 1990, p. 7). Consequently, despite the awareness of experimenter effects and reliability effects and controlling for these, the researcher is misled to believe that the particular social interaction with respondents does not have any effect. Danziger (1990, pp. 8, 50) says that a simple test situation or experiment is fundamentally a social situation and has the characteristics of a social interaction which cannot be negated.

Danziger (1990, p. 13) is of the opinion that when investigating scientific practices it is important to make a distinction between what researchers *say* they do and they actually do. Because of reigning research discourse it is sometimes difficult to expose the actual practice of scientific activities. Discourse about research practices is usually characterized by various ideological interests, especially if one interrogates prominent figures or representatives in the field of psychology. Will it be helpful to look at methodology text books of which there are literary hundreds published over the past 100 years? Textbooks tend to ossify research practices to a large extent. There is sense in which textbooks tend to incorporate the prevailing view on issues, they reflect each other to a large extent and they report technical issues and usually not historical developments (Danziger, 1990, p. 13). It probably would be helpful to observe research psychologists doing their investigations but if one would like to study the development of research practices over a period of time it is probably better to look at published information. A better reflection of investigative practices would

18

be research reports for governmental and independent research institutions, although one should be aware of the paradigmatic and ideological influences on them as well. Journal publications also tend to set their own standards for what counts as scientific knowledge and can also be strongly influenced by paradigmatic requirements, but in his historical investigation, Danziger (1990) opted for this route fully realizing that he should negotiate his way carefully between what the journals required from authors and how research was practiced. The existence of journals since the 1800's allowed him to sample a wide progression of investigative processes. His description included both the frequency of salient characteristics and an interpretation of practices. The journal articles provided a clue of investigative practices despite the authors' aim to represent their findings as psychological knowledge for a particular audience. This second aspect also provides an indication of social practices surrounding science but on another level. The audience constituted what the journal regarded as scientific knowledge and information had to be restructured to conform to this ideal (Danziger, 1990, p. 15).

2.2.1.2   Models of experimentation

The establishment of Wundt's laboratory in Leipzig formed the earliest example of how a laboratory should be run. The details need not concern us here (Chung & Hyland, 2012, pp. 34-60), but the social implications Danziger identified need to be emphasized. Although Wundt started off in physiology, the earliest scientific connection psychology had was with physiology. Wundt published a textbook comprised of three quarters physiology, and his laboratory developed a new model for social interaction in contrast to what applied to physiologists (Danziger, 1990, p. 29). The latter usually worked alone with occasional assistance from assistants, while the Leipzig laboratory developed into a space where assistants worked together with their subjects, experienced students were replaced with younger ones and all shared a common interest in psychology. The experimenter-subject role was usually fulfilled by the same person on an alternate basis (Danziger, 1990, p. 30). The target subject was known by a number of terms but most prominently as an observer. To the modern ear this might seem confusing because we are used to the observer being the "objective" and "detached" person making observations about subjects. However, the term observer indicates the strong role introspection and self-observation played in the earliest laboratories. Only later was the term "subject" introduced to refer consistently to the subject simultaneously indicating the institutionalization of the psychology laboratory (Danziger, 1990, p. 32).

Other models of psychological investigation existed. Clinical experimentation was constructed quite differently than the Leipzig model of research. In the late 1800s, hypnotism was utilised under experimental conditions to investigate various psychological states (Danziger, 1990, p. 53). The clinical experiment changed the social relationship between the participants. For instance, as opposed to the Leipzig

19

model where experimenter and subject could be interchanged, the clinical experiment had clear roles, and class distinctions existed between therapist and hypnotic subject. Binet moved from hypnotism to infants in the 1890s without changing the structure of the clinical experiment. This was possible because the clinical experiment usually had medical overtones and the subjects ranged from "normal" to "abnormal" participants. The medical connotation of the term "subject" encapsulated the idea of an examiner examining an object as opposed to co-investigating with others expressed by the social situation of the Leipzig model. The latter afforded particular status and importance to the "subject" whilst the former viewed a "subject" as relatively impersonal and passive.

The third model for psychological experimentation was based on the Galtonian example of doing measurements on large groups of people for payment. Galton did anthropometric[4] measurements on at least 9000 persons at the international Health Exhibition in London in 1884 providing them with information on their mental abilities in return for payment (Danziger, 1990, pp. 54-55). Danziger (1990, p. 55) speculates that the major success of this model was due to the existence of a precedent in society at that stage, namely, the practice of phrenology. The social situation looks different than that of the Leipzig model. The investigator is the specialist providing expertise to the layperson. The roles are not reversible as was the case with the Leipzig model, but it is also different from the clinical experiment. The consenting subject is willing to pay for information, thus, acknowledging the authority and expertise of the investigator. Of course, the investigator obtained a mass of information for her purposes. One should, therefore, distinguish between the interest of the investigator and that of the subject.

2.2.1.3   The formative social context

Danziger (1990) makes a number of observations from his discussion of the three models of investigation. The first is that the social and cultural context influenced the nature of psychological investigation. Psychological investigative practices, as the embodiment of the first steps of a developing science, did not develop in a vacuum. Thus, the customs of the German nineteenth century university research institute, medical investigations, competitive school exams and similar practices provided models for psychological investigation (Chung & Hyland, 2012, p. 60; Danziger, 1990, p. 58). The forms of investigative practice were utilized, adapted and developed to suite psychology's needs, and it is important to state that the choice of methods and practices were probably neither deliberate nor rational but contingent, opportunistic and parasitic on existing traditions (Danziger, 1990, p. 59).

---

[4] Anthropometry is the measurement of proportions of the human body "Anthropometry" 2015).

2.2.1.4   The aims of knowledge practices

The formative influences on practices are but one side of the story; knowledge goals also played a role in the development of the practices. Hence, Danziger (1990) argues that knowledge generative practices and the goals of knowledge converge. The Leipzig model provided generalized knowledge of the human mind, while the clinical model yielded knowledge of pathologies. The Galtonian model aimed at gaining knowledge of the distribution of certain human capabilities in the population.

There is no one true model of what experimentation should look like even though a certain practice may have dominated for a long time as was the case in the concept of the psychological laboratory of the behaviourists: *"Questions about the scope and limits of experimentation in psychology have usually presupposed a particular variant of experimental practice. However, it is historically more meaningful to compare the implications of different forms of practice"* (Danziger, 1990, p. 59).

2.2.1.5   Scientific practice and the construction of the person

One implication is the construction of the individual. Each model yielded different views about the individual, namely, the individual as an exemplar of a generalized mind, a case in clinical experimentation and a statistic (Danziger, 1990, p. 58). The Galtonian subject is an anonymous individual with particular characteristics that can be compared to others. These individuals did not collaborate with the investigator as in the Leipzig model.

In the last part of the 19th century and the first part of the 20th century the emphasis in research shifted from individual experimentation to group studies. The Galtonian model gradually dominated investigative practices. An emphasis was placed on comparing individuals to norm groups and the average score on abilities (and related constructs). The problem with the aggregate-type research was the construction of the "average" individual which, of course, did not correspond to any real individual but provided support for a so-called ideal or average type individual in terms of whatever characteristics were measured (Danziger, 1990, p. 78). Statistical description of populations of individuals was quickly viewed as valid scientific knowledge or facts (Danziger, 1990, p. 76). Thus, rates and averages were seen as valid knowledge collected from actual and relevant groups within society. Knowledge had practical relevance as opposed to the basic and non-relevant knowledge of Wundtian experimentation. Surveys and questionnaires were subsequently a valid means of collecting data. However, Danziger (1990, p. 77) correctly points out that different opinions prevailed about what statistical regularities meant for individuals and communities: some held these regularities as indicative of laws of behaviour of individuals, while others ascribed it to tendencies of an average person, not the individual.

21

In sum, the three methodological models had the following consequences for how knowledge was perceived. (a) Laboratory methods laid the foundation for radical individualism. The stable characteristics of the experiment *"owed nothing to social conditions"* (Danziger, 1990, p. 57). The behaviour in the test situation could be generalized. (b) Large scale methods established a base or norms against which individuals can be compared to. The replication of a study was now done with many individuals (Danziger, 1990, p. 57). (c) The statistical nature of data creates the impression that it is unambiguous and social policy and rational decisions can be based on the information (Danziger, 1990, p. 57).

The development of group experimental research involved constituting groups that were not constructed according to naturally occurring social groups or structures. Danziger emphasizes that these groups were artificial to a large extent in the sense that an experimental and control groups were constructed that corresponded to groups with stable characteristics and that were able to change on one characteristic. The problem is that these artificial groupings served as models from which to generalise to persons in the population. Because an artificial group was constructed, the constructionist argument is that no group in the real world corresponds to the sample used in investigative practices, so the results cannot be applied. Of course, a realist answer would support the use of artificially constructed groups, given the acknowledgement of their restrictions and limitations. A constructed group is similar to a conceptual experiment or model in Mäki's sense (see paragraph 5.3.2). It is utilised to isolate the explanatory mechanism.

2.2.2 Current paradigms of psychology: the twentieth century and beyond

Mackay and Petocz (2011b) recently pointed out the major themes in psychological science and research. According to Mackay and Petocz (2011b, pp. 18-21), three broad directions currently exist: (a) a cognitive/neuroscientific experimental grouping. The traditional cognitive-based theories (Fodor, Minsky and others) fuel this group. It has a close allegiance to neuroscience, representationalism is largely the epistemological position and the view that the brain is a computer underlies its theory. (b) The second group is in some sense allied with the first. The unreflective metatheoretical group which according to Mackay and Petocz (2011b) is the majority group, consists of those that support the hope of detailed discoveries made by the first group and work in diverse areas such as personality, social psychology, applied psychology, emotion and cognition but theoretically they are unreflective and in a sense naïve. Mackay and Petocz (2011b, p.19) hint that the statements about what psychological research involves found in many methods textbooks express the sentiment of the second metatheoretically unreflective group.

Research is done with the rather naïve assumption [5] that psychologists study behaviour and the processes underlying it. This conglomeration of theories and studies assume physiological and mental processes underlie behaviour, it is possible to measure these processes and utilise various statistical methods to establish relationships between constructs. There are literary thousands of constructs posited, operationalised and measured. This grouping aligns itself with the so-called cognitive revolution but differs from the first meta-position by being critically unreflective. It is followed by the majority of psychologists, can be characterised as eclectic and is caught up in the false belief that psychology as a science is progressing (Mackay & Petocz, 2011b, p.19).

The third group consists of (c) those opposed to the mainstream. It is mainly heterogenous and consists of social constructionists and constructivists. As Mackay and Petocz (2011b, p.20) say, this group is united in its rejection of the mainstream view, usually typified as positivist. The group also rejects personality and social psychological theories as well as the experimental-computational grouping. The group advocates the constructionist nature of knowledge, rejects traditional empirical psychology and makes a clear distinction between methods for the natural and social/human sciences (Mackay & Petocz, 2011b, p.21).

Underlying all three streams are particular images of science and from the discussion about origin of science and experimentation above, the outlook for realism as a metatheory for psychology seems bleak. However, the story does not end here. Thousands of institutions train psychology students and students have been trained under the umbrella of a particular idea of what psychological science is, namely, the scientist-practitioner model. The emphasis of this model is that a practitioner should first of all be a scientist; although harbouring a lofty and valuable ideal, it is a model that probably did psychological science more damage than good. Let us commence from the conflation of realism and positivism and then illustrate how the scientist-practitioner model deepened a particular image of science.

2.2.2.1   Conflating realism and positivism

Hibberd (2010) summarises the prevailing attitude towards realism as a case of mistaken positivist identity quite strikingly:

---

[5] *"Most psychologists see this as unproblematic. It situates them in the postbehaviourist world, seems to deliver the scientific licence to measure various hypothesised internal factors (attitudes, abilities, beliefs, appraisals, expectations, emotions, values, perceptions, goals, and so on—generally treated as internal representations), to model their interactions (articulated in information-processing terminology), and then use statistical analyses to partial out the effects of the multiple variables, and so to weigh their contributions and interactions. There are in contemporary psychology indefinite and exponentially increasing numbers of such internal concepts posited, then 'operationally defined' in terms of some test as quantitative variables"* (Mackay & Petocz, 2011b, p.20).

Notably in the psycho-social sciences, a conflation of positivism and realism is not uncommon, especially among those of a social constructionist persuasion … One consequence is that the philosophy or metatheory that upholds just some of the ideas above is dismissed summarily and, thereafter, nothing the 'positivist' says is seriously considered (pp. 39-40).

This is not to deny that one might still encounter (social) scientists harbouring naïve empiricist ideas about their science. The challenge is to unravel the misunderstanding and clearly state how realism differs from positivism. Hibberd (2010) points to numerous authors who, some time ago, did the unravelling for us. However, the misunderstanding recurs and it is my contention that the social constructionists are responsible for perpetuating the myth, mainly, because it provides a convenient backdrop for praising the virtues of a constructionist approach. For less experienced students writing proposals and needing to defend their methods, a simple dichotomy is easy to grasp and defend: quantitative and empirical science is positivist, and thereby, any approach dealing with empirical stuff is positivist. Some even define positivism in terms of realism, namely, that positivists defend the existence of an objective reality (meaning a mind independent reality). Thus, when emphasising the difference between positivism and realism, one should then be very careful not to get trapped into what social constructionists believe about positivism.

Realism in its simplest form postulates the independence of mind and what exists (Chakravartty, 2007). According to Bhaskar (1975), realism is, thus, an ontological position. Positivism in its simplest form is the reduction of meaningful statements to what is observable. Accordingly, the empiricist slant should be clear because what is normally observable is usually empirical. Stated in another way, restricting reality to the empirical is, in a sense, to restrict it to what is observable. The second major characteristic of realism is its allowance of real unobservables (Mäki, 2011b).

2.2.2.2   The scientist-practitioner and its scientific image

The impetus to train practitioners within the scientist-practitioner (SP) model came from the initiative of a decision made at Boulder, Colorado in 1949, consequently, known as the Boulder model (Jones & Mehr, 2007). This story continues close on the heels of where Danziger's ended above. As we will see it had a major influence on how psychologists viewed science. One gap still needs to be filled though, and this is the issue of the development of the quantitative imperative in psychology, but this discussion follows in paragraph 2.2.3 below.

The SP model was built on the assumptions that research knowledge and skills play an important role in practice, finding evidence for proven practices would enhance practitioner impact and research-based practice can address social issues

(Jones & Mehr, 2007). Jones and Mehr (2007) summarised the role of the practitioner as follows:

> *A scientist-practitioner is someone who applies critical thought to practice, uses proven treatments, evaluates treatment programs and procedures, and applies techniques and practices based on supportive literature. As such, one who embodies the role of a scientist-practitioner neatly integrates science and practice to best serve clients in a psychological realm* (p. 770).

The rise of the notion of evidence-based practice (EBP) since the early 1990's, originating in the medical environment but adopted by the helping social sciences, is another articulation of the SP model (Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2013). The EBP model is based on three assumptions, namely, what evidence is best and available for treatments that work, utilising clinical expertise to make decisions about treatment and the values and interest of clients influencing treatment choice (Lilienfeld, Ritschel, Lynn, Cautin, et al., 2013, pp. 885-886). EBP should be distinguished from empirically supported therapies (EST) which refers to only one of the assumptions of both the SP model and the EBP approach (Lilienfeld, Ritschel, Lynn, Brown, et al., 2013, p. 388).

Although training at many institutions implicitly or explicitly accepts the tenets of the SP model, the ideals of Boulder did not exactly realise as envisaged (Chang, Lee, & Hargreaves, 2008). A number of papers argue for a stronger emphasis on the SP model and in a number of special issues the matter was seriously investigated for clinical and counselling training (Asay, Lambert, Gregersen, & Goates, 2002; Barnette, 2006; Lampropoulos, Goldfried, et al., 2002; Lampropoulos & Spengler, 2002; Lampropoulos, Spengler, Dixon, & Nicholas, 2002; Lueger, 2002; Stone, 2006; Stricker, 2002; Vespia, 2006; Vespia & Sauer, 2006). The consensus is that the scientist part of the model is neglected and recent surveys revealed interesting attitudes of practitioners towards the model (Lilienfeld, Ritschel, Lynn, Brown, et al., 2013). As with the SP model, many practitioners are reluctant to embrace even the evidence-based approach, probably for similar reasons.

Some of the issues raised against adopting the EBS approach are, firstly, a lack of adequate emphasis on scientifically assessed therapies at graduate level, and practitioners' entrenched beliefs in the efficacy of their own approaches. The trust in one's own intuition and only accepting the efficacy of an approach by direct involvement can be called naïve realism. Coupled with erroneous beliefs about scientific evidence, one can understand practitioners' reluctance to drop "tried-and-trusted" therapies in favour of unfamiliar but evidence based ones (Lilienfeld, Ritschel, Lynn, Cautin, et al., 2013).

Secondly, one's interest and skills influence to what extent one endorses the SP model. The natural polarisation of scientist and practitioner is readily apparent in those that teach, students and even within the body of practitioners as well. Some people are just not that interested in research and are naturally inclined towards practice (Chang et al., 2008; Maddux & Riso, 2007).

Thirdly, the role of the supervisor in facilitating this process of exposure to science and integration of science and practice is crucial (Jones & Mehr, 2007). However, long-term career goals play an important role: academics, and thus trainers, focusing on research, loose the crucial exposure to a practice over time. The inclinations of trainers tend to rub off on students, and the onus is on trainers to set the example for proper science-practise integration (Overholser, 2007). The converse is also true—trainers focusing on skills training often do not have time or interest to publish.

Lastly, the most important finding was that practitioners view the science model they need to subscribe to *as largely positivist,* thus, limited in utility and applicability.[6] Despite the Boulder ideal, integrating science and practice will never take place if practitioners and scientists alike regard the scientific paradigm underling the SP model as outmoded and inapplicable.

One author explained the ineffectuality of the SP model as follows:

Psychology's current commitment to positivist explanation, scientific knowledge characterized by law-governed causal processes, is at the core of the scientist-practitioner split (Chwalisz, 2003, p. 497) and … *Efforts to establish psychology as a scientific discipline underlie the alignment with a logical positivist philosophy of science … and its assumption that an objective reality exists that can be observed by researchers. However, psychological phenomena are far too complex … to be adequately captured using positivist scientific methods, and psychology has inadvertently limited its knowledge by aligning with positivist science* (Chwalisz, 2003, p. 499).

Thus, the evidence for empirically supported therapies (EST) is regarded as positivist especially where statistics is involved to decide the efficacy of outcomes (Chwalisz, 2003). Some studies call for an expansion of what is viewed as evidence, namely, including evidence from single case and qualitative studies and from less controlled situations of observation and interpretation. There is no need to redefine of what counts as evidence. Such a plea merely exposes one's ignorance of what counts as science; I argue for a revision of what we understand as science and in the process the myth of positivistic science needs to be exposed for what it is. The quotes from Chwalisz (2003) above, should not, in the light of my remarks, be taken at face

---

[6] "… *the majority of graduate level clinical psychology training programs are based on a flawed version of the scientist-practitioner model that renders the training inadequate and ineffective*" (Chang et al., 2008, p. 288).

26

value. I agree with the point Chwalisz (2003) wants to make, namely, the image of science both practitioners and scientists have is that of the mythic beast. However, the science they criticise is not positivist, but realist; the approach they advocate, namely qualitative, is also realist and also scientific.

2.2.3   Measurement in Psychology

Michell (1997, 1999, 2000, 2003a, 2003c, 2005, 2009, 2011a, 2013) provided an analysis of the problem of measurement in psychology. Firstly, I would like to point out what the state of psychological science in South Africa is, and then refer to the importance and place of measurement in psychology and social science. The gap I spoke about above in the cursory historical overview will be filled in by means of the discussion of measurement (paragraph 2.2.2.2 above on page 24). It will become clear how psychology married its view of measurement with positivism and what psychological science involves. Michell (1999) provides a very lucid and in-depth account of this phase in the history of psychology that is well worth reading.

2.2.3.1   Methods in South African psychology

South African psychology to a large extent, and international psychology to a lesser extent, were preoccupied with eradicating measurement from its vocabulary in order to push a qualitative agenda based on the belief that it is a necessary corrective to positivist views of science in psychology (Stevens, 2003, p. 201; Terre Blanche, Durrheim, & Painter, 2006). Psychology for the past 100 years in South Africa was dominated by a white male minority, which within the apartheid ideology, did not help the case of psychology at all (Nicholas, 1990; Stevens, 2003, p. 190). Before the end of apartheid, and for twenty years after its demise, a qualitative based psychology and methodology based on a largely constructionist and critical view of psychology were advocated by liberal and mainly black academic institutions (Stevens, 2003, pp. 191, 203; Zietkiewicz & Long, 1999). The historically white institutions were to some extent slow on the uptake but critical and constructionist psychology won the day eventually. Understandably, because of racial and gender discrimination, the coarse neglect of living conditions, health and mental health of Black communities, and South Africa's poor human rights record in general, critical psychology and its local and international proponents were recruited for the purpose of deconstructing traditional psychology and opening the field to transformation (De la Rey & Ipser, 2004; De la Rey & Kottler, 1999; Duncan, Stevens, & Canham, 2014; Hickson & Kriegler, 1991; Ratele, 2003).

The endeavour was relatively successful and in the process professional psychology is still being transformed. However, this critical resistance and transformation came at a price, scientifically speaking. Building on the insights of traditional qualitative and critical researchers, qualitative psychology was promoted on grounds of the belief that quantitative psychology and methods are positivistic,

and that positivism is fundamentally not able to account for the rich meaningful experience of social groups, and of course, politically and psychologically suppressed minorities/majorities (Hickson & Kriegler, 1991; Stevens, 2003). In addition, psychological measurement is seen as instrumental in maintaining racial divides by consistently showing Black groups as mentally and psychologically inferior to whites (Louw & Foster, 1992). The very necessary critical work has been done but in the process psychology students in the country became functionally illiterate with regard to quantitative methods. It is, consequently, of utmost importance to clarify and unravel the underlying philosophical and methodological muddles, so that psychology as science can get back on track.

This brief introduction explains the background to my personal sentiments and motivation for examining the realistic basis of psychology as a viable alternative to positivist and social constructionist metatheories in psychology. The topic of this thesis is *"A critical realist view of psychology as a science"* and in Bhaskar's approach I initially found an apparent way out between thee two roads of positivism and constructionism, none of which make scientific sense for psychology on their own. Each is utilised for ideological agendas, but I am convinced that the bifurcation is misplaced. I think that CR cannot address the issue of science in psychology, not because the flights of spiritual fancy CR took later in its development (Bhaskar, 1993, 2002), but because it faults fundamentally on social and psychological reality.[7] In the next section I give a brief overview of Michell's work on measurement.

2.2.3.2   Quantitative and qualitative methods

In principle, and based on realism, no conflict between qualitative and quantitative methods as methods of enquiry needs to be assumed (Michell, 2011c). Methods are driven or determined by the nature of the phenomena under discussion. Qualitative method supporters construct their case for qualitative methods in pointing to positivism's inability to accommodate meaning. In fact, positivism is believed to incorporate the quantitative imperative and the argument is that quantitative methods are wrong because they cannot allow for meaning in objects/phenomena studied. Michell (2003c, p. 12) aptly calls this frequent but vacuous claim a *"creation myth."*[8]

The image of science qualitative proponents created was not based on actual logical positivism but on a version of naïve realism (Michell, 2003c, p. 17). It is this constructed image that has to bear the brunt of criticism. The fact that qualitative

---

[7] Bhaskar died recently (Graeber, 2014).

[8] *"It is ironic just how wide of the mark modern qualitative researchers were in constructing their own, self-serving creation myth … In finding themselves in conflict with the quantitative imperative, they preferred to believe that they had come up against science's hard, positivistic edge. In truth, it was only its soft, mystical underbelly"* (Michell, 2003c, p. 12).

proponents build their case on a mythic image of science does not mean that the quantitative imperative does not exist or that positivism is not to blame for a number of science theoretical sins (Michell, 2003c). One should rather set the record straight in terms of the real origin of the mythic image of science, and free qualitative approaches to base their *raison d'être* on realism.

Michell (2003c) pointed out that there is truth in the positivistic link with psychology, because in reality psychology, at the turn of the previous century, had a solid view of science as positivistic and modelled itself on this view of science. Natural science was, indeed, seen as the template of rigorous and valid science, and measurement in natural science conveyed this sense of rigour. The irony is that positivism, according to some proponents such as Carnap, did not see measurement as crucial for scientific rigour and even allowed a place for qualitative investigation (Michell, 2003c, p. 12). What Michell (2003c) calls the quantitative imperative, or the requirement of measurement as the hallmark of science, comes from a Pythagorean worldview that claims an underlying quantitative structure for all of reality (Michell, 1997, p. 462; 2003c, p. 19; 2011c, p. 244). Although there is always something to count in most situations, this fact does not mean that situations and attributes have a quantitative structure. Having quantitative [9] structure is an ontological characteristic that the scientist needs to discover.

Throughout the history of thought the idea of quantity as a category was held as fundamental. Kant viewed quantity as transcendental, i.e. a category or structure imposed by the mind on the world (Michell, 2003c, p. 8) (see paragraph 6.4 below). Anderson (1962j, 2005) viewed the categories as ontological and amongst them the category of quantity.

A number of scientists, from psychologists to natural scientists, expressed the measurement–scientific rigour equivalency. Michell (2011c, p. 244) quotes Thorndike who said, "*whatever exists at all exists in some amount.*" Thus, the quantitative imperative was and still is fundamental to scientific thought. Psychology's unfortunate development took this imperative on board and it is no wonder due to the prevalence of the idea in mainstream psychology, that qualitative researchers position themselves against this requirement. Michell (2003a) contends that this is a mistake and that the quantitative imperative is false on realist grounds. We need to acknowledge that some structures and phenomena are quantitative, while others are qualitative. The mere fact that we can talk of more or less in some situations, say, of attitudes, does not logically entail the quantitative structure of that phenomenon. If I resent my father deeply and Susan resents her father only a bit, then it does not mean that this ordinal-sounding construct has a quantitative structure. Michell

---

[9] What did Anderson say about the category of quantity?

(1997) points out that the positing of a quantitative structure should be an empirical matter in both natural and social sciences.[10]

The conjoint measurement theory of Luce and Tukey (1964), provides a logical and empirical basis for testing the conditions of quantitative structure of a construct (Michell, 2008a, 2009). I will not discuss the theory here.[11] However, it is worth the effort to expose psychologists and students to this theory. The mistake researchers often make—and this mistake is actually taken as valid practice in psychometrics—is to regard ordinal structure as quantitative, thus, measurable (Michell, 2009, 2012a). Quantitative structure of a thing means that it is amenable to measurement and Steven's (1946) defence of the levels of measurement (which we teach psychology students to this day) allows us to argue from ordinal structure to quantifiability. Usually, ordinal structure is believed to be interval or ratio so that parametric statistics can be utilised. However, the fact that there are more or less of something, or that things are countable—an issue part of realism's (SiR) ontological principles—does not imply measurability (Michell, 2009). Thus, attitudes are not quantities but weight is.

2.2.3.3   The quantitative imperative

Michell (2000, 2008b), on a number of occasions, pointed out the systemic and systematic ignorance of the problems of measurement in psychology so much so that he calls it a thought disorder, or pathology, of measurement in psychology. The problematic "*assigning numbers to things according to a rule*" of Stevens (1946) in the early 20th century to save psychology from the embarrassment of not being a quantitative science, had the effect of psychologists measuring almost everything, from intelligence to personality (Michell, 1997, p. 360). Of course, the same happened in other social sciences but the hallmark of science as quantification prevailed strongly in psychology to this day to such an extent that constructs are reified unboundedly and psychologists never bother to empirically investigate the quantitative structure of their constructs. Instead, the operationalist mistake of regarding the nature of a thing as similar to its measurement keeps thoughtless quantification alive. Realism, thus, requires the empirical investigation of the measurability of a construct and this means finding additivity to be part of its structure. In sum, it is the duty of the scientist to examine constructs empirically for quantitative structure (Michell, 2011c, p. 245).

---

[10] "*If an attribute is not quantitative, it cannot be measured. Therefore, if anyone aspires to measure some particular attribute, the first step, logically speaking, is to investigate whether it possesses quantitative structure. It is in relation to this step that mainstream psychology has been egregiously negligent and the stance it has adopted is scientifically anomalous. There is no evidence that the attributes that psychometricians aspire to measure (such as abilities, attitudes and personality traits) are quantitative*" (Michell, 2011c, p. 245).

[11] Much less nonsense in psychology will take place and be studied if we are aware of the constraints quantitative structure places on the researcher.

In fact, the concept of "construct" requires evaluation as well because its ubiquitous use in psychology stems from the same chapter in psychological history when Stevens and others tried to save measurement for psychology (Michell, 2013). However, a construct cannot be measured if it does not have the attribute that is internally structured as quantifiable. Furthermore, an instance of that attribute should have magnitude and this magnitude needs to be related to units of some sorts (Michell, 2003a, p. 522). Michell (1993) regards modern measurement theory as basically representational, i.e. the numbers attached to attributes are arbitrary and represent something to give it meaning. However, traditional measurement theory stemming from Aristotle and Hölder takes number to be real and part of the inherent structure of magnitudes (Michell, 1993, 1994). He explicitly argues for a realist conception of number, although for our purposes it is necessary to understand that measurement assumes real quantities and magnitudes. As a side note, this is what the problem of the idea of construct boils down to: it is a construction of the researcher assuming that anything that can be specified in sufficient detail and clarity can be measured, and this just is not true. The tradition in psychology to examine the validity of constructs[12] bypasses the empirical imperative to examine a phenomenon's internal structure (Cook & Campbell, 1979).

The ideological differences separating quantitative and qualitative approaches should also be pointed out. Our understanding of science involves seeing mainstream psychology as adhering to experimental and empirical methods where quantification plays a major role. This is typically characterised as positivist and I hold textbook authors and lecturers responsible for perpetuating this view (Neuman, 2012; Terre Blanche et al., 2006). By being characterised as such it is a small step to motivating the use of qualitative approaches based on post-modern and constructionist epistemologies and inclinations. The understanding of psychological science as divided into ideographic and nomothetic, i.e. working with causal laws (positivist) on the one hand and with meaning (postmodern/constructionist) on the other hand, established the gap fundamentally and resulted in this ideological divide (Lilienfeld, Ritschel, Lynn, Cautin, et al., 2013). We chastise students for even thinking about sample sizes, validity and hypotheses when they get involved in qualitative work: their terms, theory and methods should all speak one language and be purified from any positivist residues and we are getting quite adept at this. It is a matter of principle to immerse oneself as a psychology student in the correct paradigm, namely, a

---

[12] Construct validity is defined as "measuring what one is supposed to measure." The normal practice is to correlate one $test_1$ that measures x with another $test_2$ that claims it measures x. It is an infinite regress argument because the test developer of $test_2$ did the same with the assumptions of $test_3$ and so on! Cook and Campbell (1979) are aware that determining construct validity can be regarded as a bootstrapping exercise, and proposed their famous multi-trait multi-method approach.

constructionist one. We deal with meaning that cannot be captured by operationalisation and measurement.

Of course, what is known as mainstream psychology internationally is not very concerned with these accusations and psychologists happily continue to do research and theorise about issues ranging from psychometrics, neuropsychology, social psychology, developmental psychology, and cognitive psychology (Mackay & Petocz, 2011b). Some of these trends are reflected in South Africa but I think we might have a stronger qualitative approach or focus on meaning due to our focus on constructionist, narrative discourse and critical psychology, but still against the backdrop of demonising the remainder as positivist (Michell, 2001) (see my discussion in paragraph 2.2.3.1 above). It seems to me that the qualitative trends internationally are not so prominent and that mainstream still means empirical and quantitative.

2.3 Anti-essentialism of constructionism

Sayer (1997) gave a critical review of essentialism, the resulting anti-essentialism which is used by constructionists as a major weapon in their battle with so-called hegemonic[13] approaches (Lock & Strong, 2010, pp. 7-8). Here, as elsewhere, one is dealing with a philosophical concept and it should be approached as such. Its use and abuse as an epistemological principle applied to ontology can be critically assessed. The principle of essentialism has been used in various contexts and theories. Its use in postmodern approaches is aimed to unsettle the hold so-called categorisations of the world have on minds. There are many versions of essentialism, some of which Sayer (1997) discusses. One can, for instance, distinguish between reductive and cultural essentialism. Reductive essentialism means different categories are viewed as a reduction to their biological origins or natures. For example, male-female binaries are reduced to genetic biological differences. Cultural essentialism refers to differences between people in cultures that are homogenised. Another version is methodological essentialism that restricts methodology to one approach (Sayer, 1997, p. 454).

A broad distinction between essentialism and anti-essentialism can be made. There are weak or moderate and strong versions of each. If essentialism claims that all objects have essences, then it is a strong version. Essentialism is compatible with realism if one agrees that some objects have characteristics, properties, mechanisms or powers that make them what they are. Thus, water has unique properties that liquid hydrogen does not have. Similarly, marriage (as a social object) has unique properties that distinguish it from capitalism. However, as Sayer (1997) says, given

---

[13] *"It has become common to see references to 'essentialism' in social scientific literature, and they are overwhelmingly derogatory, indeed it has been widely noted to have become a term of abuse which silences or short-circuits argument, being irredeemably tainted by associations with racism and sexism …"* (Sayer, 1997, p. 453).

that water and marriage have essences it does not follow that everything has. In realist terms essence can be understood as particulars having powers, tendencies, properties and/or mechanisms that uniquely constitute that thing for what it is (Sayer, 1997, p. 458). In fact, the taxonomic and explanatory tasks of science are aimed at determining essences. However, the pejorative use of "essence" precludes us from making too much of the term.

Sayer's (1997) brief discussion of anti-essentialism is probably sufficient to alert one to the typical reactions to both weak and strong essentialism and how essentialism formed hybrid problems when paired with real and apparent issues, such as determinism and reductionism. This discussion is also useful in illustrating undiscriminating criticism of realist approaches to science when everything that slightly dares to venture into the empirical field reeks of positivism.

Softer versions of constructionism seem to be close to realism. Stronger versions, however, are characterised by relativistic tendencies. Thus, Bhaskar and Harré can be said to propound a softer version because it still leaves the mind-reality independence intact, whilst stronger versions such as those of Potter and Gergen, dissolve reality and make it mind dependent, so much so, that the reality constructed by one mind is not the same as that of a second person. Obviously, this view has implications for truth: true reality or phenomena cannot be known; worse, there is nothing like true or essential reality. This is constructed and its construction, which might be a social process, makes it real.

2.4   Relativism

The adequacy of realism to serve as some backdrop for psychological investigation were under scrutiny some time ago, in a prominent debate between Parker (1999a, 1999b) and others (Edwards, Ashmore, & Potter, 1995; Potter, Edwards, & Ashmore, 1999). Famously, realism was dismissed off-hand by Edwards et al. (1995) with the rejection of the death and furniture argument:

> *When relativists' talk about the social construction of reality, truth, cognition, scientific knowledge, technical capacity, social structure and so on, their realist' opponents sooner or later start hitting the furniture, invoking the Holocaust, talking about rocks, guns, killings, human misery, tables and chairs* (Edwards et al., 1995, p.26).

The debate between the two sides were adequately summarised and remarked upon, but it is worthwhile, with hindsight, to lift out some pertinent aspects. For instance, McLennan (2001) pointed out that both sides needed to be heard in terms of the implications of realism and relativism, although Edwards et al. (1995) merely pointed out the one side, namely, relativism. What is required, then, is a balanced approached to show that relativism does not merely equate to issues such as irresponsibility or subjectivity and even irrationalism, but the same is called for

33

realism, and this is what Edwards et al. (1995) seemed to leave out in *"Death and Furniture."* Realism cannot be equated with absolutism, positivism, objectivism, and so on, or even with quantification (Michell, 2001, 2008b)!

What was the debate about? A number of scholars from Loughborough University engaged each other about the arguments for and against relativism and realism (McLennan, 2001). On the relativist side were Jonathan Potter, Derek Edwards and Malcolm Ashmore against the realist defence of Ian Parker. The relativists initially defended their position against "bottom-line" realism and after Parker's reply, against Parker's realism as well. The relativists claimed that realists invariably fall back on table thumping against relativists' claim that reality is constructed; how real can a table be if you can feel and hear the thump, and if this action does not convince the relativist of his/her untenable position then at least suffering and death should be "objective" enough as not to be denied? For how can a hurt, bleeding and dying child be the constructionist imagination of any sensible human being? How sick must society be to allow the rape of babies be perceived as mere constructions, i.e. a version of reality to be accepted as legitimate as any other, none of which dare claim a hegemonist primacy above any other?

The table-thumping action by a realist is supposed to show that this thing is solid and not a mere illusion. Everyone can, thus, agree that a table is not a social construction if by social construction we mean not really real: the solidity of the table is contrasted with the ephemeral nature of social constructions (Edwards et al., 1995, p.29).

Parker (1999a, 1999b) tried to provide some balance in the views between relativism and realism. The issue boils down to unmasking psychology's pretence of being scientific but also avoiding the dangers of relativism. Despite the insistence by Edwards et al. (1995) that relativism is the only proper *scientific* approach available, Parker (1999a) pointed out that relativism easily changes into perspectivism where every argument is merely an equally valid perspective to be tolerated; it refuses to make a decision for a particular position and reduces standpoints to mere *"turns"* in a conversation, it makes extreme statements about state of affairs but then retracts into a milder and more commonsensical position. In fact, these are rhetorical strategies or balancing acts to *"hold relativism in psychology in place"* (Parker, 1999a, p. 69). The other party reacted relatively vehemently to this article, arguing that Parker misrepresented relativism, that it certainly is not an *"anything goes"* approach but in fact, that *"'anything goes' is a variant of realism, suggesting merely a different arrangement of cogs in the underlying generative mechanism"* (Potter et al., 1999, p. 81).

One of the major problems in the debate as Hibberd (2001d) pointed out, is the reluctance to define[14] constructs in post-modern debates. One should distinguish between trivial and non-trivial relativism since the former is what any realist can agree with. A relativism in radical opposition to realism should adhere to two conditions, namely, diversity incorporating contrariness and subjectivity[15] (Hibberd, 2001d). Each condition on its own is necessary but not sufficient for radical relativism but both together are sufficient. Diversity means that knowledge claims of the same thing for *different* communities differ in terms of one claim *contradicting* the other. The crucial aspect is that the knowledge claims are subjectivist and by this Hibberd (2001d, p. 104) means *"that the knowledge-claim, as asserted by the first community, and either its contrary or contradictory, as asserted by the second community, are both the case in this actual world."*

The force of this claim becomes clear in the light of defining the terms knowledge, knowledge claims, beliefs and certainty in terms of knowledge of reality. The only aspect that is not relative, i.e. its truth is not defined in terms of a particular context, is knowledge. *Certainty* about one's knowledge claims is a psychological state, and having a belief about something does not mean it is a fact. Even the latter can still be refuted. Thus, fallibility implied by the relativity of knowledge claims, and so on, is also a trivial characteristic of realism. However, the realist needs to state that at some stage knowledge claims are about knowledge—an objective state of affairs of how things are in the world. This minimalist definition of objectivity is part and parcel of realism: things are a certain way in the world independent of my beliefs about it.

Therefore, what the radical relativist asserts is that claims about a state of affairs differ between two communities and that also the state of affairs is objectively true for those communities.

The strategy of not clarifying concepts, thus setting up the opponent in a particular manner in order to shoot the position down, seems to be typical of realist-relativist debates. Both accuse the other of using rhetorical strategies but as McLennan (2001) points out, the strongest issue arising from the debate is the establishing of a metatheoretical perspective in which rhetorical strategies are identified and pointed out. However, it is crucial to separate the wheat from the chaff

---

[14] Defining is similar to essentialising and should be avoided.

[15] The concept subjectivity is multifarious: (a) subjectivity *"…involve(s) a first-person perspective, a reference to how things are for me"* (Zahavi, 2009), thus feelings, beliefs, desires; (b) opinion in contrast to knowledge (Solomon, 2005) (c) Phenomenological experience (what is to be a bat) (Solomon, 2005); (d) Perspective: *"…everyone sees the world from his or her (or its) individual vantage-point, defined in part by nature, by culture, and by individual experience"* (Solomon, 2005). In contrast (b) above stands against a minimal realist definition of objectivity which can be defined as: what the case is (Hibberd, 2001d). Hibberd's second condition of radical relativism seems to entail (d) with the "absurd" consequence that the reality, as it is, is different for two communities.

because in the end both parties lose. The relativists lose their bite[16] by forfeiting their crucial ability to critically question and deconstruct any claim about reality; realism loses, because the more it protests, the more intent the opponent is to portray it as positivist. In fact, this is what happens within the Loughborough interchange: realism and empiricism are equated,[17] but realism is not materialism, thus, the concreteness of[18] the table standing in for realness is misleading (McLennan, 2001). If we say that the relativist's attack of the bottom line argument is misguided by an invalid conflation of empiricism and realism, does the same not apply to the realist when he/she levels the bottom-line argument against constructionism? For as McLennan (2001) says:

> *Indeed, the very point of critical realist talk of structures, mechanisms, tendencies and powers that are often unactualized as well as unperceived is to underline, against empiricism, that knowledge of real processes and entities is necessarily aspectual; that the nature of being requires interpretation; and that existence is characterized by complexity* (p. 92).

If both parties agree on the aspectual nature of being why does the realist still say to the relativist "you cannot deny the reality of the holocaust"? Does the difference not lie in the how we understand "to construct"? If construction implies making up fictions or our minds construct reality in an idealist sense, then the relativist misconstrues her own position as idealist! Against a fundamental idealism the realist has to say: some things lie beyond words.[19] McLennan (2001) concludes

---

[16] "*… once you take the stance-ness out of relativism, its polemical bite is lost*" (McLennan, 2001, p. 89).

[17] "*The impressionable reader might not see that at various points in 'Death and Furniture', realism and empiricism are conflated, as in the rhetorical question: 'Are not these [the realists] the folk who say we should find out the facts, discover whether some race or gender really is inferior on some measure, test the hypothesis, check out whether the Holocaust really did happen, and so on?' (Edwards et al., 1995: 35) Well, no, actually*" (McLennan, 2001, p. 91).

[18] Concrete refers to the "material and specific" (McArthur, 1998). The concrete/abstract distinction gained prominence when the mind/body one could not account for additional distinction such as Frege's insistence that numbers are not empirical but abstract but do not exist in someone's mind (Rosen, 2012). Physical(ism) and material(ism) is usually used interchangeably currently and boils down to the thesis that everything that exists is caused by the physical (Stoljar, 2009). In the light of these references reification can be easily understood as "*To treat an abstract concept as something concrete*" (Colman, 2009).

[19] "*'Rock' is indeed a label that we have invented for the stuff that we confront in various ways. But if 'rocks are cultural too' means that what we currently refer to as 'rocks' are culturally and variably constituted, as in the proposition that they do not exist 'in the world beyond words' (ibid.: 31), then of course realists will strongly disagree*" (McLennan, 2001, pp. 92-93). The issue for relativists is clearly language. Parker (1999a, p. 68) quoted Geras (1995) to point out that "*The victims and protestors of any putative injustice are deprived of their last and often best weapon, that of telling what really happened*" upon which Potter et al. (1999, p. 84) replied that using this example works "*by ontological gerrymandering (authoring-in a reality beyond the text), which is how vignettes of this kind generally work, in circular fashion.*" The important point is what realists do when they thump tables, namely, "*authoring-in a reality beyond the text*" and elsewhere "*…realists shoot themselves in the foot as soon as they represent*" (Edwards et al., 1995, p. 39). Thus, reality is the text or

that even that which gives relativism its bite, cannot be exclusively the property of relativism: *"the argument for the primacy of analytical practice … is undermined by posing this as an account of relativism as such"* (p. 99).

---

language meaning that nothing can be said about anything if it is not through language. Is this not what critical realists say? In fact it is so apparent that Cruickshank (2004) says Bhaskar's view of ontology is Kantian: if the transitive is mediated intransitively how can we know the real? It is thus encapsulated like Kant's noumena.

CHAPTER 3 EMPIRICISM AND POSITIVISM

3.1 Introduction

In the previous chapter it was seen that in the confrontation between relativism and constructionism in the one camp, and realism, positivism and empiricism in the other camp, the idealist variety of the philosophy of psychology invariably conflates realism with empiricism and positivism. Although it is not my task to explicitly unravel these confusions and issues some clarification will be done in order to show what the place and position of realism is in psychological science. Although positivism[20] with its various incarnations, as a strong empiricist representative, had its time in the sun, for some reason it is still deemed a worthy opponent in the science of psychology. Of course, this statement does not negate the fact that there might still be classical positivists within psychology. However, the aim of qualitative and constructionist criticism is positivist science that mainly uses quantification as its methodological lens, and restricts its statements to what is observable. In the process realism is crucified as positivist. Thus, I would like to start a bit early in the history of empiricism and emphasise the issues that will assist in distinguishing empiricist from realist (psychological) science but that also allow us to understand the aims of Bhaskar's Critical Realism.

3.2 Classical Empiricism

One can distinguish between empiricism as is employed in the theory of science and its technical usage (Morick, 1980). The first refers to the doctrine that experience is the source of our knowledge. The contrasting position or doctrine is that of rationalism, which holds that reason is the source of knowledge. The technical use is closely related with the use above. Empiricism then implies that experiential methods are used to obtain knowledge rather than conceptual methods such as starting from principles or theories (cf. Morick, 1980, p. 1).

3.2.1 Various descriptions of empiricism

The rationalists and empiricists reacted in various ways to the Aristotelian and Scholastic views of knowledge and science. Meyers (2006, p. 11) summarised the principles of the Aristotelian/Scholastic view as three theses which hinges on the distinction between matter and form. (a) The reception thesis: perception involves receiving the form of an object without its matter, i.e. different forms are instantiated in matter, accordingly, the differentiation of different objects by perceptions depends on the reception of their form. (b) The abstraction thesis: qualities of objects can be abstracted to form new ideas. Abstract ideas can be combined into complex ideas to form new knowledge. The simple ideas of objects such as redness are also formed in this abstraction process. (c) The correspondence thesis: ideas correspond to objects or features of objects that are mediated by forms in the mind and forms of actual

---

[20] (Meyers, 2006)

objects. We know that knowledge is true by means of the correspondence of the forms of ideas and forms of objects (Meyers, 2006, p. 11).

This three-tiered structure can be usefully applied when evaluating the views of knowledge and science of the rationalists and empiricists. The development of science in the 17ᵗʰ century led to a reaction against the long-standing Aristotelian/Scholastic view of form and matter (cf. Meyers, 2006, p. 11). Matter was now regarded along the lines of the atomism where it was seen to consist of corpuscles. The ontological status of these corpuscles was another matter.

3.2.2   *Locke*

Locke's view of knowledge is similar to that of other empiricists, such as Berkley and Hume: experience is the source for simple ideas (Meyers, 2006, pp. 1-2). He commences with epistemology believing that it is necessary to determine the capacity of the mind to know (Winkler, 2010, p. 43). His examination of understanding took place within the then current views of the mind-body division, which means that the interaction between mind and objects was a major psychological and epistemological problem. Locke thus examined the ideas, what they are and where they came from. His method was the *"historical plain method"* which means that all ideas can be traced back to their origin, which ought to be experience, and if the origin cannot be found, then the ideas were false (Fogelin, 2001, p. 7; Winkler, 2010, p. 42). Simple ideas are atomistic or not complex, i.e. they cannot be divided into other ideas. One obtains an idea from experience, i.e. external experience by means of the senses but also from mental reflection (which refers to introspection). The ideas are reworked by rational capabilities into abstract ideas (Lowe, 2005, p. 9). Thus, for Locke, all experiential knowledge starts with sensation. Sensations (both internal and external) inform ideas and allow us to know the existence of objects, their primary (like shape and number) and secondary qualities (such as colour). Simple ideas form abstract ideas. The combination of abstract ideas forms complex ideas. The comparison of ideas form ideas of relations (cf. Meyers, 2006, pp. 18-19). Meyers (2006, p. 20) points out that there are three contrasts, namely, particular and abstract ideas, simple and complex, and relative and non-relative ideas. Lowe (2005, p. 9) indicates that Locke can be read as either espousing a direct realism or indirect one, although the traditional view is to side Locke with the latter, i.e. a representationalist (see footnote 161 below) view of ideas mediating between objects and the mind (Winkler, 2010, p. 46).

Knowledge, according to Locke, is the agreement of ideas (Lowe, 2005, p. 52). More importantly, knowledge is certain. He distinguishes between a priori knowledge and knowledge that can be gained only from experience. A priori knowledge involves issues such as statements of identity and relation (e.g., "x is y") or geometrical propositions (cf. Meyers, 2006, p. 21). These statements are known a priori: does this mean that Locke concedes to Cartesian rationalism in the sense of acknowledging that there is innate knowledge (i.e., knowledge that we are born with so that

39

experience does not play a role)? No, Locke went to great lengths to demolish the doctrine of innate knowledge (Jones, 1969, pp. 242-245; Lowe, 2005, pp. 23-32; Meyers, 2006, pp. 13-15; Winkler, 2010, p. 48). For our purpose it is sufficient to note that whereas Descartes assumed that a priori knowledge is innate and does not arise from abstraction, Locke acknowledged that knowledge may arise from abstraction, therefore, with no need for an innate hypothesis (Meyers, 2006, p. 12). Descartes rejected the abstraction thesis mentioned above whilst Locke accepted it. Locke's attack on innate ideas leads to the famous tabula rasa view of the mind: the mind is blank from birth and experience writes on it. Various interpretations can be given to this idea (Meyers, 2006).

Locke makes a distinction between ideal and real existence (cf. Meyers, 2006, p. 22). Ideal existence consists of those abstract ideas that are a priori such as mathematical relations and combinations of ideas such as "mermaids are fish that is half human." The previous statement is an example of a universal proposition that depends on the relations between ideas and refers to ideal existence: their certainty does not depend on real existents but on ideal ones. In contrast, particular propositions refer to real existence ("this stone is heavy"), which can only be justified empirically. The link then between real existence and ideas is an agreement between ideas and the idea of real existence. We have knowledge of real existence in three situations, personal existence, God's existence and the existence of objects.

There are three different levels of knowledge all of which have degrees of certain knowledge attached to it, viz., intuitive knowledge, demonstrative and sensitive (Lowe, 2005, pp. 52-53). Intuitive knowledge is certain and obvious. Demonstrative knowledge also provides certain knowledge but not with a single once-off intuition and involves a series of relational steps (Jones, 1969, p. 252). Knowledge of objects or sensitive knowledge is obtained by an inferential process which is not deduction and not as strong as intuitive or demonstrative knowledge (Meyers, 2006, p. 24). In all probability the idea that one has of an object before one, corresponds to the object but it might well be that one has an idea without the corresponding object (as in hallucinations). Meyers (2006, p. 25) points out that the inference from the idea as premise to the conclusion that one is perceiving an actual object is neither deductive nor inductive (i.e., one cannot infer from a number of experiences that the object in front of me is actually the object). Consequently, the link between an idea and sensible objects is problematic. The second problem with Locke's sensitive knowledge is the claim that knowledge is always certain. In this case, stating that the object in all probability does exist or corresponds to my idea *"lowers the standard"* for what counts as knowledge—it either is certain or it is not (Meyers, 2006, p. 25).

From the above follows Locke's view of scientific knowledge. He made a distinction between nominal and real essences. Nominal essences are those that describe the surface characteristics of an object such as the redness of an apple, that

it smells a certain way and so on. Real essences are those that describe the insensible nature of an object, i.e. its corpuscularian constitution. Because Locke holds that corpuscles are insensible, they cannot be known experientially and accordingly real essences cannot be determined. We do not have the means for determining real essences. Meyers (2006) puts it well:

> *Perception provides knowledge (just barely) at the sensible level, but it fails at the insensible and more **explanatory level**.*[21] *The conclusion Locke draws is that scientific knowledge of nature is impossible. The only evidence we can have about real essences*[22] *is analogical,*[23] *hypothetical and probable while scientific knowledge must be certain.* (pp. 26-27).

3.2.3   Berkley

Berkley famous dictum *"Esse est percipi"*—to be is to be perceived—in a sense summarises his views. First of all, one has to take note of the way he criticises Locke's view of the abstraction of ideas (Fogelin, 2001, p. 24). Locke, as we have seen, holds that ideas can be abstracted from objects, for instance, redness can be abstracted from the red of an apple, a rose, a dress and so on. To abstract means to separate or differentiate conceptually and not ontologically as Berkley thought Locke was doing (Meyers, 2006, p. 44). Berkley views abstraction as possible for some but not for other concepts. For example, a door can be said to exist independently from window or house although they are ontologically part of the same phenomenon. However, redness cannot be thought independently from extension, thus it requires an object for its thinkability.[24] Berkley's criticism of abstraction is applied to matter, viz., matter does not exist either as a universal or a particular; it is a vacuous concept since all that one can find when analysing objects are sensible qualities (Winkler, 2005, p. 142). This criticism of abstract ideas is also applied to notions of being: existence/being as an abstract quality cannot be separated from an object, i.e. the existence of an object is not an abstract quality or a universal but lies only to be perceived.

Berkley's main thesis is that the existence of objects depends on perception. His theory is thus a form of subjective idealism (Fogelin, 2001, pp. 23-24). He holds that we perceive objects directly but that objects of direct perception are a coherent unit of ideas. We know that objects are real empirically. This means that ideas cohere (or

---

[21] My emphasis. The idea of an explanatory level will be discussed in the following chapters.

[22] Locke's view of perception and knowledge is important to understand the distinction between knowing categories and powers (Lowe, 2005). *"The senses do not give knowledge of the essence or nature of bodies, but they do give knowledge of their existence, and enable us to distinguish between them"* (Ayers, 1998).

[23] As will be seen in the following chapters the analogical aspect of scientific knowledge is a necessary (but not sufficient) component in the process of science.

[24] According to Meyers (2006, p. 45), Berkley's mistake was to view representation as images.

form orderly patterns) and we cannot will them away (Meyers, 2006, p. 41). Are objects then illusory (Ayers, 2005, p. 51)? Material substance is useless in explaining existence because it does not exist. Thus, the real does not consist of material substance but of ideas forced on us. He distinguishes between ideas of the real thing and ideas of the imagination. The one is less vivid than the other and the one is coherent and durable in a way the other is not. Ideas of a closed door reveal themselves in the sensations one has when walking into it. The mark then of the real is a coherence of ideas forced upon us as in the case of walking into a door, thus having different sensations. A dream or hallucination does not cohere in the same way with ideas from the environment and they thus cannot be real. Another characteristic of real ideas is that they are independent of our will in contrast to the ideas of our imagination. However, despite this idealism the criterion for what is real depends on empirical experience.

According to Meyers (2006) empiricism is an epistemological doctrine which derives knowledge of real existence from the empirical, *"… but this does not imply that knowledge that something does **not**[25] exist must be empirical. Knowledge of non-existence can be empirical or **a priori**"* (pp. 38-39). This means that his principle "to be is to be perceived" is still empirical at heart. Non-existence can be thought a priori, for example, the non-existence of square circles (Meyers, 2006, p. 39). For Berkeley, square circles and material objects are the same type of things: they are impossible to conceive because for a material object to exist it must both be thought and not thought which cannot be done. Thus, material things do not exist but real things do because we know this by sense experience.

Scientific knowledge is the coherence of ideas or the relationship of ideas to each other. It ought to be clear by now that ideas express qualities, and one has qualities of objects such as motion, colour, temperature, and so on. Thus, not the material substances are examined by science but their qualities or ideas and the relationship of the ideas to each other. Therefore, laws indicate the conditions when a set of ideas are experienced (Fogelin, 2001, p. 69). According to Jones (1969, p. 290) the prevailing view of science (or the new science) was that bodies are in motion and they caused sensations in the mind. A distinction can be made between what was real and that what was mere appearance. The latter refers to the qualitative aspects of objects, i.e. their smell, taste, colour and so on and these properties are subjective or contributed by the mind (Jones, 1969, p. 115). As indications of what is real they are of less use than objective properties such as motion, weight, length, and so on. The latter could be measured and here we have the seeds of the ever present quantitative-qualitative distinction in science (Jones, 1969, p. 116). The objective properties which can be quantified were in a sense viewed as ontologically more

---

[25] Author's emphasis.

important and of course philosophers utilised these aspects of the scientific world view: *"Thus everything in the existing climate of opinion pointed inevitably toward an interpretation of the distinction between qualities and quantities in ontological terms, as a distinction between appearance and reality"* (Jones, 1969, p. 116). However, the scientific view caused philosophical problems such as the mind-body interaction issue. Berkley's contribution was his emphasis on the relation between ideas rather than a reduction of things to bodies in motion.

3.2.4   Hume

3.2.4.1   Hume's doctrine about ideas, perceptions, impressions

Hume (1962, p. 45) divides perceptions into ideas and impressions, thus refining Locke's distinction between ideas of sensation and ideas of reflection which led to metaphysical speculation (Jones, 1969, p. 299). The distinction between ideas and impressions lies in their "liveliness" or "vivacity," an apt way to indicate that ideas are actually abstractions while impressions derive from sensation, passions and emotions. Ideas—or rather simple ideas, meaning single ideas—are copies of simple sensations or impressions. Ideas are the thoughts we have about impressions that may consist of more abstract thought but also memories of impressions.[26] A memory of an impression is, of course, fainter than the actual lived sensation. Two types of ideas flow from the working of *memory* and *imagination*—the more lively ideas (or recollections in modern usage) come from memory. When an idea looses its clarity or proximity to the original impression and it is reworked then it comes from the faculty of the imagination (cf. Hume, 1962, pp. 52-53). The purpose of imagination is to change ideas and "transpose" them (Hume, 1962, pp. 53, 131). Imagination distinguishes between ideas, combines ideas into more complex ones but memory preserves the order and position of ideas. A simple example of ideas flowing from memory is the "memories" we have of a cricket match. One can remember the particular events as they transpired when points were scored. Thus, these memory ideas hold their place and order as they have occurred. The imagination can combine and distinguish ideas almost freely. Thus, poems and other forms of literature and creative activities are possible by means of the imagination.

3.2.4.2   Simple and Complex ideas

Hume (1962, p. 47) distinguished simple and complex ideas and the same for impressions. The general rule is that ideas are copies of impressions but in some instances a complex idea does not follow from a complex, simple or other impression

---

[26] *"Of this impression there is a copy taken by the mind, which remains after the impression ceases; and this we call an idea"* (Hume, 1962, p. 51). Hume made a distinction between impressions as sensations that originate in the senses and *reflection* that originates in the mind. These secondary impressions derive from reflecting on the primary sensation. The primary sensation of pain when burning my finger is copied as an idea, stored in memory, and when reflected upon or recalled, invokes a feeling, say of fear, and this secondary impression is a reflection.

at all. A unicorn, which no one ever saw, is a complex idea consisting of a horse and a horn. So, this complex idea has no origin in a complex sensation but the simple constituent parts can be traced to their origin, namely, actual impressions of horses and horns. All simple ideas can be traced to simple impressions. Hume challenges the reader to find any *simple* idea that is not a copy of a simple impression. In fact, he (1962, p. 49), in a rather blasé manner, utilises the principle of induction, to indicate that one can try to think of as many instances of simple ideas that do not have simple impressions as it source. Thus, the concept red has a singular experience of red as its origin.

Hume poses the principle that every idea is accompanied by a similar simple impression and every impression leads to a simple idea. He (1962) follows:

> *From this constant conjunction of resembling perceptions I immediately conclude, that there is a great connection betwixt our correspondent impressions and ideas and that the existence of the one has a considerable influence on the other. Such a constant conjunction, in such an infinite number of instances, can never arise from chance; but clearly proves a dependence of the impressions on the ideas, or of the ideas on the impressions* (p. 48).

Thus, impressions and ideas always go together. The question is which is first? Hume's answer is that experience or observation of the order of appearance of appearance and impressions shows that impressions are always first. From the order of appearance and the constant conjunction of these two events one can conclude that impressions cause ideas (Hume, 1962, p. 49).

Above it was said that the imagination can combine and distinguish ideas "almost" freely. Except for memory where the order and position of ideas are preserved, the imagination is governed by certain principles of how ideas are associated. Hume (1962, pp. 54-55) thought that the principles of association between ideas are resemblance, contiguity, and cause and effect. Ideas that *resemble* each other tend to be associated. Also ideas that lie *close* to each other in time or place are associated, and finally, one idea can cause another. The faculty responsible for the combination of ideas into complex ones and to associate ideas is the imagination. It can, of course, separate complex ideas into simple ones as well.

3.2.4.3   Cause and effect is known by experience

Hume distinguished between two ways the mind can examine its contents and the world. He made a distinction between analytic and synthetic knowledge. The ideas that do not have any link with experience as such, such as mathematics, can be subjected to certain operations. Comparing in terms of similarity and contradiction holds for these ideas. An example from logic would be A = B and A ≠ B contradicts each other while the statements "the sun will rise tomorrow" and "the sun will not

44

rise tomorrow" do not contradict each other in the same logical way. Both statements are possible in a world of experience (of course, the statement "the sun is not shining" while it is shining contradicts experience and is thus false).

Hume examined the notion of cause and effect. When assuming that one thing (object or event) causes another, (Hume, 1962, p. 341) says that three[27] principles must be adhered to: contiguity of time and place (the cause and effect must thus be close together in time and/or place), temporal precedence, i.e. the cause must precede the effect, and a "constant conjunction" of the cause and effect.[28] The question one must ask then is whether it is rational to infer cause from effect, or that a causal relationship exists between A and B if the three requirements hold? Can we, by contemplating the fact that B followed A, or to make it concrete, that ball B started moving when ball A struck it, infer the necessity of B moving when A strikes it? Hume's answer is simple: no amount of contemplation will demonstrate the necessity of the connection between A and B. An empirical experience will only show that ball B moves when A strikes it. The only reason we think we "see" a necessary connection is that the human mind is constructed to expect similar outcomes as soon as we have seen a number of events follow each other. Thus, we expect the sun to rise, we expect ball B to move when struck by another ball, and we expect a hot stove plate to burn the hand when touched.

According to Hume the perception of a number of instances where events are conjoined, one precedes the other and they are close together in time and place, leads the mind to eventually expect similar outcomes. Of course, the expectation is not formed immediately after one pair of events or objects have been perceived—it must be a reasonable number in order to form a *habit* that leads to an expectation. When by habit we expect an event to follow a precipitating event the effect actually need not occur in order for us to infer that B will follow. Thus, when we justify our belief that B will follow on grounds of a number of similar events it cannot be rational; it is psychological.

3.2.4.4   Induction

Hume's (1962, pp. 133-135) discussion of induction and that of cause and effect goes together. He says that the observation of a number of objects (or events) of one sort or type that is always observed with another event of a different type allows one to infer cause and effect. The events or objects of one type must occur with the other type (there must be a constant conjunction of objects/events), they must take place

---

[27] Although elsewhere he states eight principles (Hume, 1962, pp. 224-225).

[28] Hume mostly speaks of a "constant conjunction of *objects*" while Bhaskar (1975) ascribes "constant conjunction of *events*" to Hume.

in close proximity, and the one must follow the other. [29] Thus, the constant conjunction—whether it is observed or remembered it (such as remembering that the sun rises in the east)—provides ample evidence to infer a relationship of cause and effect between two events.[30] Hume argues that the relation of a constant conjunction does not provide one with a *necessary connection* between events—all that a constant conjunction provides is the fact that objects or events appear for a number of times in a certain order and close together (contiguity). According to Hume, no new knowledge of the relationship between two objects is provided whether one observes one, two or a hundred instances: *"It may be thought, that what we learn not from one object, we can never learn from a hundred, which are all of the same kind, and are perfectly resembling in every circumstance"* (Hume, 1962, p. 135). No new knowledge about the relationship, whether it establishes a necessary connection or not, can be found:

> *From the mere repetitions of any past impression, even to infinity, there never will arise any new original idea, such as that of a necessary connection; and the number of impressions has in this case no more effect than if we confined ourselves to one only* (Hume, 1962, p. 135).

The question then is where does this inference come from and Hume (1962, p. 135) asks whether the necessary connection that we pose between cause and effect is based on the inference we make or is the inferences based on the necessary connection? If the necessary connection is based on the inference then the mind plays a larger role in our science than expected. If the inference is based on the necessary connection then we can justify our inference empirically: this implies that a necessary connection exists empirically and every inference that we make from a number of observations to a prediction that this relationship ought to hold in the future is valid.

Hume (1962, p. 135) argues that either reason or experience establishes the causal relationship. If it is reason then it follows from the assumption *the future resembles the past*. In other words, can we infer that events that we did not experience will resemble events that we have had experience of (cf. Hume, 1962, p. 136)? Because we can easily think of situations where a certain course of events in nature

---

[29] *"Contiguity and succession are not sufficient to make us pronounce any two objects to be cause and effect, unless we perceive that these two relations are preserved in several instances"* (Hume, 1962, p. 134). The third relation is that of a constant conjunction between objects or events.

[30] *"It is therefore by **experience** only that we can infer the existence of one object from that of another. The nature of experience is this. We remember to have had frequent instances of the existence of one species of objects; and also remember, that the individuals of another species of objects have always attended them, and have existed in a regular order of contiguity and succession with regard to them. Thus we remember to have seen that species of object we call **flame**, and to have felt that species of sensations we call **heat**. We likewise call to mind their constant conjunction in all past instances. Without any further ceremony, we call the one **cause**, and the other **effect**, and **infer** [my emphasis] the existence of the one from that of the other"* (Hume, 1962, pp. 133-134) (all emphases the author's except where indicated otherwise).

can be interrupted, it proves, according to Hume (1962, p. 136), that the future does not resemble the past.[31] The principle of cause and effect—a principle known only from experience—is the only basis for inferring that events in the future will resemble those found in the past. However, reason cannot provide any justification for a necessary connection between events as we have seen, and experience also fails to justify this belief in a necessary connection.

The argument is rather simple: even if one tries to find a more basic principle or concept behind the idea of necessary connection, such as a power or production, and then try to observe this principle in past occurrences of events or objects, the same difficulty as with the concept "causation" or "necessary connection" applies. This difficulty is the inability to infer with certainty that the same power will cause an effect the next time the causal process comes into effect. No number of observations could provide any additional facts regarding any power, or necessary connection. The same question always arises, namely, how do we know that the next event will, with certainty, be followed by its effect?

Accordingly, neither reason nor experience can justify induction or causation (Hume, 1962, p. 142). What steers us to use the principle of induction? Again Hume reverts to a psychological explanation: it is the imagination's ability to associate ideas and impressions.[32] Ideas get associated if they are contiguous, resemble each other and cause one another (Hume, 1962, p. 139). Going one step further, the tendency to associate ideas and impression leads us to expect the effect to follow the cause. Thus, a habit forms, and it is not really true that no new knowledge is formed after a number of observations of objects or events; a psychological fact is formed in the form of a propensity to expect a certain outcome. Thus, although the number of observations cannot lead one to either a rational or experiential justification of the expectation that the future will resemble the past, it leads to the formation of an expectation and it is this expectation that the future will resemble the past that drives induction and our conception of causation.[33] A very flimsy and subjective foundation for science indeed!

---

[31] *"… there can be no **demonstrative** arguments to prove, **that those instances of which we have had no experience resemble those of which we had no experience**. We can at least conceive a change in the course of nature; which sufficiently proves that such a change is not absolutely impossible"* (Hume, 1962, p. 136) (author's emphasis).

[32] *"The inference therefore depends solely on the union of ideas"* (Hume, 1962, p. 139).

[33] *"First we may observe, that the supposition, that the future resembles the past, is not founded on argument of any kind, but is derived entirely from habit, by which we are determined to expect for the future the same train of objects to which we have been accustomed"* (Hume, 1962, p. 184).

3.2.4.5   Scepticism regarding the existence of the external world

Hume argues that the idea of existence, such as the existence of an object, cannot be separated from the idea of its existence. Both ideas need to be reduced to impressions and there is no separate impression for existence over and above that of the object itself: "… *the idea of existence is not derived from any particular impression*" (Hume, 1962, p. 112).

External existence is also not separately given than by an impression of an object[34]—whatever there is, consists of our perceptions, i.e. impressions: "*To hate, to love, to think, to feel, to see; all this is nothing but to perceive*" (Hume, 1962, p. 113). Hume then concludes with the argument that it is impossible to justify or account for existence or external existence of objects because we have access only to impressions. How do you get beyond an impression to the object causing it? In order to determine whether an impression corresponds to an object one needs another impression of the relation and *that* is still an impression!

It is important to realise that Hume does not deny the existence of external objects and the fact that they exist continuously. Hume assumes that one cannot but help to believe in existence and the existence of external bodies, but it is a belief that cannot be proved or justified (Copleston, 1964, pp. 97-98). The belief can be taken for granted but the question is why one is led to believe in existence and the external existence of bodies or objects.[35]

Hume deals with two questions, namely, *continued* existence on the one hand, and *distinct* existence on the other hand (Hume, 1962, p. 239). Under distinct existence he considers *independent* and *external* existence. Continued existence deals with the problem of how we know that objects exist even if we do not continuously monitor them. To the modern[36] mind this sounds really far-fetched but the point is that justifying a belief and assuming it because we just know it is so, are two different things. Distinct existence as independent and external existence refers to the existence of objects independent of the observer. Continued and distinct existence is related in the sense that if an object exists continuously then it implies it exists when the observer "is not looking." When there is no observer, the object exists independently of her. As was said above, Hume does not deny the belief in continued and independent existence. Apart from philosophers, John Doe believes that it is common sense that things exist independently and continuously. Thus, this belief, as

---

[34] "*We may observe, that it is universally allowed by philosophers, and is besides pretty obvious of itself, that nothing is ever really present with the mind but its perceptions or impressions and ideas, and that external objects become known to us only by those perceptions they occasion*" (Hume, 1962, p. 113).

[35] "*We may well ask, What causes induce us to believe in the existence of body? but it is in vain to ask, Whether there be body or not? That is a point which we must take for granted in all our reasonings*" (Hume, 1962, p. 238).

[36] The term is used very loosely here.

48

common sense, arises from somewhere and Hume's argument is that it is certainly not from experience; he goes on to show that it also cannot arise rationally and that the imagination is probably responsible.[37]

Continued existence cannot be reduced to experience because we do not have continuous impressions of objects. As soon as we look away then we have no more sensations of an object—why do we infer that an object continues to exist after we stop looking?

With reference to external existence Hume indicates that it is obvious that impressions of my body and impressions of objects beyond my body are impressions of different things.[38] At first glance, it seems sufficient to rely on the senses to convince one of the external existence of objects. However, according to Hume, all that we have are impressions and not really something distinct in terms of a difference between my body and other objects. Furthermore, perception of distance as an argument cannot work for establishing externality because, again, all that we have are impressions and (in a concession to the rationalists) it is the mind that needs to convince us that impressions of smaller objects are further away (Hume, 1962, p. 242). Can we then establish the independence of existence, i.e. that objects exist independently of our perceptions? Hume's argument is simple: if we have only impressions it is impossible to have both an object and its impression as perceptions to establish their independence of existence. To perceive an object is to have an impression—in principle, a double impression (an object and its impression) is impossible.

If the senses cannot be utilised in the justification of continued and distinct existence, the question is, as raised above, whether *reason* can justify our belief? Hume (1962, p. 244) is brief and to the point. Most human beings[39] trust their senses in inferring continued and distinct existence of objects. They do not know the clever arguments of philosophers that might justify the belief in the separate existence of objects on rational or non-empirical grounds. Therefore, we need not rely on reason

---

[37] *"These two questions concerning the continued and distinct existence of body are intimately connected together … But though the decision of the one question decides the other; yet that we may the more easily discover the principles of human nature, from whence the decision arises, we shall carry along with us the distinction, and shall consider, whether it be the **senses**, **reason**, or the **imagination**, that produces the opinion of a **continued** or of a **distinct** existence"* (Hume, 1962, p. 239) (author's emphasis).

[38] *"The paper on which I write at present is beyond my hand. The table is beyond the paper. The walls of the chamber beyond the table. And in casting my eye towards the window, I perceive a great extent of fields and buildings beyond my chamber. From all this it may be inferred, that no other faculty is required, beside the senses, to convince us of the external existence of body"* (Hume, 1962, pp. 241-242).

[39] Hume (1962, p. 244) distinguishes between the 'vulgar' and the philosophers! A constructionist such as Gergen would object to devaluating "folk" knowledge in this way in order to emphasise the superiority if the philosopher's expertise. (This is a tongue-in-the-cheek remark!)

to establish this belief. The question then is, if it is not the senses or reason that can justify this belief, where does it come from?

3.2.4.6 Scepticism regarding the senses

All that remains, according to Hume's doctrine is the imagination. Of course, the hints were given above: the belief that objects beyond my study as seen through the window are really far away, is based on something the mind added to the impression of objects outside my window. Hume indicates that *constancy* of perceptions leads to the idea of continued existence. Observations over time have the effect of a person becoming accustomed to perceived objects even though the impressions are interrupted and not identical (Hume, 1962, p. 250).[40] The mind fills in the gaps and assumes that the objects perceived exist between instances of observations. The memory retains a number of impressions of objects that are disconnected. Because they resemble each other they are associated according to Hume's principles of contingency.[41] The association happens because we have a propensity to regard these different ideas as similar. The belief in continued (and distinct) existence is a fiction;[42] it is fabricated by the mind by taking the memories as alike. We, thus, have a propensity to combine memories and "feign" continued existence. The imagination combines memories of previous impressions (Hume, 1962, p. 260). The so-called "vulgar" person or non-philosopher regards this "fiction" as sufficient to believe in continued existence, but the philosopher or sophisticated thinker knows that impressions are disrupted:

> *This propension to bestow an identity on our resembling perceptions, produces the fiction of a continued existence; since that fiction, as well as the identity, is really false, as is acknowledged by all philosophers, and has no other effect than to remedy the interruption of our perceptions, which is the only circumstance that is contrary to their identity. In the last place, this propension causes belief by means of the present impressions of the memory; since, without the remembrance of former sensations, it is*

---

[40] *"When we have been accustomed to observe a constancy in certain impressions, and have found that the perception of the sun or ocean, for instance, returns upon us, after an absence or annihilation, with parts and in a like order as its first appearance, we are not apt to regard these interrupted perceptions as different (which they really are), but on the contrary consider them as individually the same, upon account of their resemblance"* (Hume, 1962, p. 250).

[41] *"Our memory presents us with a vast number of different instances of perceptions perfectly resembling each other, that return at different distances of time, after considerable interruptions. This resemblance gives us a propension to consider these interrupted perceptions as the same; and also a propension to connect them by a continued existence, in order to justify this identity, and avoid the contradiction in which the interrupted appearance of these perceptions seems necessarily to involve us. Here then we have a propensity to feign the continued existence of all sensible objects; and as this propensity arises from some lively impressions of the memory, it bestows a vivacity on that fiction; or in, other words, makes us believe the continued existence of body"* (Hume, 1962, p. 259).

[42] See last sentence in the quote in footnote 41.

plain we never should have any belief of the continued existence of body (Hume, 1962, p. 260).

Hume contrasts the popular and sophisticated experience/thought about continued and distinct existence. The popular view sees no problem with the senses providing sufficient evidence for continued and distinct existence. However, reflection on this position quickly shows that the senses provide impressions and that impressions are interrupted, thus not continuous, unable to link impressions and objects. In a strange way reason casts sceptical doubt on the certainty the senses were required to provide! *There is thus no certainty of knowledge as such because even the senses cannot be trusted.* The empiricist requirement that ideas be reduced to sensation cannot be done because the senses are not to be trusted—the mind fabricates the continued and distinct existence of objects. Identity is thus an operation of the imagination and not a property of the objects. The impressions of successive objects are associated based on the principles of association (Rosenberg, 2005, p. 25). How can the senses then be trusted to provide certain grounds for our ideas? Accordingly, starting off with the empiricist imperative, namely, that ideas must be reduced to sensations, leads Hume to the final conclusion of scepticism(Rosenberg, 2005, pp. 21-23):

> *This sceptical doubt, both with respect to reason and the senses, is a malady which can never be radically cured, but must return upon us every moment, however we may chase it away, and sometimes may seem entirely free from it. It is impossible, upon any system, to defend either our understanding or senses; and we but expose them further when we endeavour to justify them in that manner* (Hume, 1962, p. 269).

3.2.4.7 Summary of Hume

One needs to distinguish between Hume's epistemology and his psychology of the human mind. The epistemology is, of course, based on his psychology.

(a) Empirical criterion of meaning

His epistemological principles are based on the idea that ideas (thoughts and concepts) must be reduced to impressions (sensations) in order to establish knowledge. Locke's historical plain method was transformed in a clear empirical criterion of meaning, namely, that ideas must be traced to sensations—sensations and thus empirical experience are primary. One can understand the force of this empirical criterion in the following way: the intelligibility of an idea must be derived from a single impression located in the senses. An idea is vacuous or not meaningful in the sense of not contributing to real knowledge if it does not have its roots in the senses .

(b) Nominalism

A result of this criterion was, *inter alia,* nominalism. Only particulars exist due to the demand for finding particular instances for ideas of conceptual claims. If we

have no possibility of universals then laws cannot exist either. From the discussion above it was seen that at least Locke allowed for abstraction and, accordingly, the existence of universals to some extent.

(c)   Atomism

Both Locke and Hume held sensations (or impressions) and ideas to be atomistic; this psychological atomism reflected the scientific worldview and had a enormous influence on the development of psychology (Jones, 1969, p. 301).

(d)   Necessity and causality

According to Jones (1969, p. 318), all that is to Hume's argument negating the reality of a necessary connection between events or objects is that no amount of juxtaposition can force the observation of a necessary connection between to atomistic ideas. They remain unconnected no matter how close one brings them together and this is the end of the argument. Thus, a similar fate befalls "*necessary connection*" as did "*identity*": it is the human mind that contributes these connections and not the objects or events themselves (Jones, 1969, p. 319). Thus, causality for the empiricist is the observation of a constant conjunction of events. Meyers (2006, p. 71) points out that this is an older interpretation of Hume which was taken up by the Logical Positivists, namely, that "necessary connection" cannot be verified and is thus meaningless. However, a recent understanding of Hume involves a realist interpretation, which allows a necessary connection to exist but which we cannot explain fully.

(e)   Induction

Knowledge about the world is, consequently, in modern terms, a posteriori and based on empirical experience. Conceptual truth is analytic and not synthetic. Because knowledge is based on past experience, it means that knowledge needs to be inferred from experience. Therefore, the principle of induction, as a method of generalising from observation, plays an important role in establishing human and scientific knowledge. At first glance, Hume endeavoured to establish a firm and certain base for knowledge. However, induction cannot be rationally justified. Induction uses the principle of cause and effect to establish connections between a number of observations that consistently appear in the same temporal order. These events or objects always appear together, and the cause always has the same effect. Given the circumstantial evidence when finding a constant conjunction of events and objects, the method of induction seems justified in allowing valid inferences. However, as Hume showed, sensations and thus observation of events, or objects cannot be justified, i.e. count as a certain basis for knowledge. Induction, although utilised in science, are explained psychologically and not rationally. The psychological explanation lies in the habit formed when the imagination associates observations of similar things over time. If it is explained psychologically, and Hume showed that the

mind creates its own fictions, then it cannot be trusted. Consequently, even the Humean empirical enterprise ends in doubt. The force of Humean scepticism is too great to enable sure and certain knowledge.

3.2.5 Phenomenalism

Phenomenalism is the view that reality is based on constructions of experiences (Morick, 1980, p. 7). Stated in different words, it means that there is a correspondence of meaning between statements about the existence of objects and statements about sensations of those objects: *"… the phenomenalist claims that to say that a physical object exists is to say that someone would have certain sequences of sensations were they to have certain others"* (Fumerton, 1993, p. 330). An experience of something as existing is to have certain kinds of experiences that, for instance, the experience of a hallucination does not form part of (Morick, 1980, p. 8). One would have certain experiences if there were other experiences, which would lead us to establish the existence of objects. Thus, the existence of a mug on my table would be, according to this argument, be established if I have certain sensations (such as feeling the form and the weight of the mug) when having certain other sensations (such as having the sensation of leaning towards the mug and reaching out) (Fumerton, 1993, p. 330).

Phenomenalism was, *inter alia,* advocated to counter sceptical arguments regarding the existence of the external world. Where did this come from? Of course, from Hume. As we have seen above, Hume said that the existence of objects cannot be rationally justified.

3.2.6 Summary and conclusion

Classical empiricism Locke, Berkeley and Hume each provided an answer to how knowledge of reality is established. Locke rejected innate knowledge and held that all knowledge can be reduced to experience, whether external experience caused by external sensations (such as perceiving), or internal sensations (such as feeling). Ideas (or concepts) play a role in both thought (introspective experience) and sensation (external experience). Locke's version of empiricism wants to deny the innateness of some of the conceptual material and knowledge the rationalists assumed to be part of the mind's constitution, but he wants to show that thought and its operations can be linked to external sensations by means of ideas (or concepts and precepts) (Winkler, 2010, p. 47). Everything required for the mind to understand is thus given by experience. According to Winkler (2010, p. 46) Kant clarified Locke's vague usage of idea by referring to ideas as representations. Hume viewed ideas as the less clear counterpart of sensations or the direct impressions of sensational experience. Importantly Kant then distinguished between three types of representations, namely, (a) intuitions (*Anschauungen*) or a representation with a direct relation to its object, (b) concepts (*Begriffe*) or mediate presentations of objects (Winkler, 2010, p. 46) and c) ideas (Ideen) that are Platonic concepts beyond

53

experience. Hume made a distinction between clear and distinct sensations and ideas which entail concepts about the sensations. Knowledge need to be traced to its simple sensations. An important contribution of Hume was his denial that concepts such as necessity and universality can be empirically grounded.

In conclusion, the following aspects can be emphasised:

(a) Hume views cause and effect as a construction of the human mind grounded in the association of ideas.

(b) Necessity or necessary connection only consists of a constant conjunction of events and objects.

(c) Hume views the senses as unable to provide certain knowledge. His is a sceptical empiricism. However, it remains empiricism because there is no other avenue to knowledge than through experience and observation.

3.3 Positivism

The focus in this section is on introducing positivism in some of its guises. An understanding of positivism is necessary especially how it influenced the social sciences and psychology. Often various experimental, empirical and measurement researchers in the social sciences and psychology are accused of being positivist without really understanding what positivism entails. Positivism can easily be utilised as a catchword standing for anything remotely associated with the scientific attitude, which, of course, is wrong—I will motivate this claim later on. Positivist proponents were strongly associated with the sciences, human and natural, but certain tenets can be indicated as positivist principles that cannot be viable in a scientific enterprise as will be shown in the chapter on Critical Realism. Furthermore, the positivists, especially those associated with logical positivism in its heyday in the 1920s to 30s, disagreed on many principles, even basic principles taken to define positivism.

Although this section is not intended as a deep discussion of positivism, it is necessary to point out some issues that relate to natural and social science and psychology. An understanding of positivism as an emblem of empiricist thought is necessary for understanding Critical Realism in Bhaskar's work.

Logical positivism of the early 20th century involved criticism of metaphysics boosted by a theory of language, and reduction of the laws of science to that of more basic sciences. The standard view was represented by Carnap, Hempel, Ernest Nagel and Popper (see page 60 and footnote 48 below),[43] according to Outhwaite (1987, p.

---

[43] My supervisor pointed out that some authors, such as Outhwaite, *wrongly* classify Popper as a logical positivist. Gergen certainly does so as well. I fully agree with my supervisor and have indicated the fundamental differences between Popper and the logical positivists elsewhere (Maree, 1990). In

6). Its main tenet is that all the sciences strive for explanations. These explanations utilize laws or covering laws:

> *The roots of this conception of explanation lie in Hume's theory of causation, according to which all we can ever observe is the "constant conjunction" of events … . This is all we can know, and all we need to know for empirical science to be possible* (Outhwaite, 1987, p. 7).

Bryant (1985), in a thorough study of positivism in its various forms in social science,[44] argued that the general characteristics identified of positivism are valuable up to a point. Utilising these characteristics in a general manner without contextualising them can be misleading because one does not consider the historical situations where positivism in its various guises figured. According to Bryant (1985) these contexts were (a) the French tradition from Saint-Simon to Durkheim. (b) German and Austrian social theory before 1933 and after 1945 and (c) instrumental social theory in America since 1930. From these contexts one can identify three basic portraits of positivism, viz., that of Comte, logical positivism and the so-called standard view of science (Outhwaite, 1987, pp. 6-7). Although Bryant's focus is on social theory and his discussions focus on the various debates in social theory and sociology, it is important to take note of these contexts because the characteristic tenets of positivism developed within these debates. It is these tenets that were absolutised and generalised within their portraitures that became the feeding ground for various scholarly views that sought justification for their own positions.[45]

3.3.1   The French portraiture

The short discussion that follows can never be do justice to Bryant's (1985) in-depth analysis, but I would like to identify those characteristics that lead to the absolutised tenets. Comte, as is well known, introduced the term positivism to social science (Bryant, 1985, p. 11). Bryant is happy to group the work of Saint-Simon,

---

fact, shortly after joining the Department of Psychology at the University of Pretoria in 2000, Kenneth Gergen was a distinguished guest of the department for a week or two. At a dinner in his honour he politely enquired about the local guests' research interests. I was in awe to hear that he actually knew Karl Popper when I divulged my research interest to him and the table. Much to Gergen's amusement, I made a case that Popper cannot be regarded as a positivist!

[44] Referring to his study on positivism Bryant (1985, p. 181) said: *"This book is offered in the hope that it might facilitate more discriminating, qualified and even appreciative use of the term 'positivist' insofar as it is employed at all."*

[45] I have in mind constructionist positions that keep badgering proper science and labelling it as positivist in order to justify their own endeavours. Bhaskar (1975) pointed out that the acceptance of a positivistic portraiture of science as the proper view of science leads to serious philosophical errors. It is of course also possible that positivism in its history of development and criticism was caricatured so that we work with false portraitures and thus react to falsities.

55

Comte and Durkheim within a French tradition of positivist thought due to the overlap between their ideas.

3.3.1.1 Saint-Simon

Interestingly, Saint-Simon prefigured the positivist ideas of Comte but within a framework that even Marx accepted in contrast to his opposition to Comte (Bryant, 1985, pp. 11-12). Saint-Simon (died 1825) held that the old social order dominated by religion and the military needs to be replaced by science and industry. Negative or critical thought must be replaced by positive thought and the contributions that science and industry can offer. Although I am glossing over much of the socio-historical turmoil within which Saint-Simon developed his sociological ideas, one should remember that his insistence on the importance of scientific thought took place within a context of primary emphasis on the social contra the individualism that prevailed in enlightenment thought (Bryant, 1985). His "positivism" was developed with the assumption that science could empirically demonstrate the social ethic entailing that men freely would contribute to caring about others within society.

3.3.1.2 Comte

Comte was associated with Saint-Simon and collaborated to some extent although they later parted ways due to Comte holding that Saint-Simon propagated the positive polity even before the positive philosophy was adequately developed (Bryant, 1985, p. 28). Comte is best known for the formulation of the three stages of development, an idea that had its roots in Saint-Simon's thought (Bryant, 1985). Humanity develops and progresses its thought through three stages, namely, that of "… *the theological or fictitious, the metaphysical or abstract and the scientific or positive*" (Bryant, 1985, p. 28). A rejection of the theological and metaphysical stages meant that Comte rejected the search for final causes and confined the human mind to establishing laws within the social domain by studying what is accessible:

> *Comte emphasised that positive knowledge is obtainable only by use of the positive method. By so arguing, he began to locate the unity of science in its adoption of a common method rather than in its foundation upon some fundamental law, though he never gave up hope that the latter may some day be identified* (Bryant, 1985, p. 29).

The roots of the emphasis on method, and in particular the scientific method, can be seen. The scientific method consists in "… *the deployment of observation, experiment and comparison …*" (Bryant, 1985, p. 29). The question is whether the scientific method can be equated to positivism.

Bryant (1985) summarised the basic principles of the French positivist and I will briefly recapitulate here. (a) The implicit ontological assumption pertaining to reality is explicitly realist: the French positivists such as Comte believed that reality is one and exists objectively or independent of the human mind and its theories or

56

representations of it (Bryant, 1985, pp. 12-13). (b) Science is the only way to discover laws and what this objective world consists of (Bryant, 1985, pp. 13-14). Knowledge is defined as scientific knowledge and any enquiries into first and final causes and the like cannot be answered in science. Bryant (1985, p. 14) makes the observation that Comtean positivism employed a dual epistemology. On the one hand, it proceeded from a pragmatic perspective, i.e. with principles that worked in practice, and on the other hand, a correspondence theory of truth allowed them to enunciate the constitution of the world. Furthermore, *"The insistence that science is the only form of knowledge entails the equation of epistemology with the philosophy of science, or more accurately, the principles and practices of science"* (Bryant, 1985, p. 14). This indicates the collapse of epistemology with the methods of science; the nature of knowledge is determined by following rigorous methods, rules and practices. (c) Both observation and reason played a role in Comtean views of science. Bryant (1985, p. 14) points this out explicitly since positivism is usually equated with "crude empiricism." However, it soon becomes apparent that a mix of principles are involved: on the one hand, reason is given its due place in the process of scientific thought, but on the other hand, Comte was quick to point out that objects such as gods or essences are *"illusions"* and *"metaphysical fancies"* (Bryant, 1985, p. 15). (d) Because the human powers of observation and reasoning are limited, the knowledge that we have of the world will be limited. Ontological knowledge thus depends on epistemological adequacy (Bryant, 1985, p. 16). Due the limitations of human knowledge scientific knowledge will always be incomplete despite the fact that progress entails closer approximation to reality. Further, (e) science is driven by practical interests. (f) There are laws of historical progress, and the most famous of these is Comte's law of the progress of human knowledge, from theological, metaphysical to positive or scientific knowledge (Bryant, 1985, pp. 16-17). There are also (g) social laws of social systems (Bryant, 1985, p. 18). (h) Society is real and different views of what constitutes it as reality can be stipulated. These consist of views of how the whole and its parts are related (Bryant, 1985, p. 18). (i) The order in nature is reflected by order in society (Bryant, 1985, p. 19). (j) There is a link between the French positivists view of positive (or scientific knowledge) and ethical and political choice: the latter ought to be based on the former (Bryant, 1985, p. 20). (k) The critical potential of a positivist is restricted by the subjugation of evaluation of society to the natural laws of society. Another aspect also restricts criticism and it is worthwhile to quote Bryant (Bryant, 1985, p. 21) in full:

> *Positive knowledge is relative to, albeit theoretically directed and interpreted, observations. Being the only form of knowledge, it denies the very possibility of knowledge of things which cannot be observed. It therefore dismisses as metaphysical fancy any essences or ideal forms apparent to observation and which might otherwise have served as bases for critical evaluation of the existent.*

It is interesting to note the socio-critical aim of their brand of positivism, i.e. the need to effect critical change in society by means of opposing prevailing views of science and knowledge. The same can be said of Locke, briefly discussed earlier.

3.3.1.3   Durkheim

Bryant (1985) discussed the thought of Durkheim as part of the French tradition of positivism but in the process refers to an interesting strategy by other interpreters, which concerns this study. This is the strategy to reinterpret someone's position based on a constructed position of positivism, a portraiture that usually has a kernel of truth. The reason I would like to point out this strategy is that it is a very clever way of constructing arguments and counter arguments thereby validating one's own standpoint. I emphasise "construct" thereby implying not totally fabricating, but weaving truths and misconceptions into a coherent picture of a model or paradigm in order to justify one's own position.[46]

The question, of which a particular answer will serve as illustration of the constructionist strategy, is whether Durkheim was a positivist or not, or a realist. Now Bryant (1985) alerts us to the fact that multiple readings of Durkheim are possible, but that a single answer to whether he was a positivist or not will not do, except the one that he was as much a positivist as was Comte! Conversely, Bryant (1985) points out that Durkheim's (1982) objectivism, the deductive-nomological law found in Durkheim (1959), and Durkheim's insistence that social facts are part of nature, qualify him as a positivist. However, this characterisation should be carefully done because his position is more nuanced than this. He opposed, on the other hand, nominalism, methodological individualism and empiricism and he inferred *underlying* trends from phenomena, a manner of arguing which is compatible with realism but not with positivism (Bryant, 1985, p. 55).

Bryant's conclusion is that the French tradition of positivism is compatible with realism while other versions of positivism are not. In fact, Durkheim is a positivist in Comte's tradition, which is not only reflected in his opposition to empiricism, but also in his hope for a positive society and his provision of a scientific foundation for moral choice (Bryant, 1985, p. 56).

It is thus understandable that some would see Durkheim as a positivist and others as a realist. However, a dangerous strategy is to read Durkheim in the light of all the variants of positivism that developed since his death. Bryant explicates the strategy as follows:

> First, build up a single composite of positivism from elements of logical positivism and other philosophies elaborated after Durkheim's death …Then read back from the

---

[46] See my remarks in Footnote 45.

composite to Durkheim and show that he does not fit it. Next propose a realist alternative … Finally, rehabilitate Durkheim by lifting the curse of positivism from him and claiming him for realism (Bryant, 1985, pp. 54-55).

Bryant accuses Taylor (1982) of employing this strategy and it is worthwhile to provide Taylor's quote in Bryant (1985). Taylor provides a composite of positivism and in the light of what was said above, one should already be aware that different aspects emphasised at different times and variants of positivism make up this composite:

I shall refer to positivism as a total philosophical position embodying an ontology grounded in nominalism and phenomenalism; an epistemology holding that the only certain knowledge we can attain comes from observation, or experience, and a variety of methodologies, inductive, hypothetico-deductive, [47] *methodological-individualistic for example, based on a belief in the unified logic of scientific practice* (Taylor, 1982, p.7)

It ought to be clear, in the light of the preceding brief discussion, that Durkheim opposed some issues, espoused others and remained a positivist within the French tradition while still being able to be realist about other issues. Of course, I am quoting Bryant in this regard—one should explore Durkheim for oneself—but the point is that so-called tenets of positivism ought to be interpreted within their respective contexts. It is easy to provide a composite and justify some opposing position. The insistence on measurement as a characteristic of science is a case in point. As was discussed in paragraph 2.2.3.3 above, measurement or the quantitative imperative as Michell (2003c) calls it, is but a part of certain views of science and even of positivist variants in sociology and psychology, but at other times the mark of the beast, so to speak, cannot be found in other scientific practices at other times and contexts. I will come back to the quote above and hopefully show what is wrong with it along with other composites.

3.3.2   *Logical Positivism (LP)*

Moritz Schlick was the founding father of the Vienna Circle in 1922 (cf. Bryant, 1985). Its members met weekly between 1925 and 1936. A pamphlet was published in 1929 with some basic statements concerning the aim of the Vienna circle, which established its basic doctrines and spirit. The members were listed in the pamphlet,

---

[47] My supervisor, Prof Antonites pointed out that the deductive-nomological (DN) model was closer to what the Logical Positivists advocated rather than the hypothetico-deductive method, which is closer to Karl Popper's approach. According to Psillos (2007, p. 99), the deductive-nomological approach, formalized by Hempel, expressed the "*demystification*" of causal explanation by combining laws and deductive argument utilized by the Logical Positivists. Later the DN model was widened by Hempel and others to include inductive statements such as those based on statistical rather than universal laws.

namely, Bergman, Carnap, Feigl, Philip Frank, Gödel, Hahn, Kraft, Menger, Natkin, Neurath, Hahn-Neurath, Radakovic, Schlick and Waisman (Bryant, p.110). Interestingly, the appendix providing the list, also mentions Zilsel, Wittgenstein, Einstein and Russell as sympathisers. Although Wittgenstein was not a member, his work influenced the Circle and Waisman took it upon him to publish many of Wittgenstein's ideas (Hanfling, 1981b). Alfred Ayer attended meetings of the circle and made the work of logical positivism known in English (cf. Ayer, 1971). Karl Popper, labelled a positivist[48] by some, was not a member and staunchly rejected the label.

Hanfling (1981b) points out that the logical positivists' (LP)[49] empiricism has its roots in that of Locke and Hume—knowledge can be grounded in sense experience. The difference is that the logical positivists viewed language and not epistemology as the problem of philosophy (Bryant, 1985, p. 114). They thus focussed on the meaning of statements and according to Hanfling (1981b, p. 4), on questions such as *"what statements have meaning*?" rather than on *"what can we know?"* The two characteristics of LP indicated in a pamphlet by the Vienna Circle are:

> *First it is empiricist and positivist: there is knowledge only from experience, which rests on what is immediately given. This sets the limits for the content of legitimate science. Second, the scientific world-conception is marked by the application of a certain method, namely logical analysis[50]* (Vienna Circle, 1973, p. 309).[51]

A number of LP characteristics can be identified, but again it must be stressed that LPs did not always agree on the basic doctrines: (a) elimination of metaphysics, (b) reduction of science to physics (c) verification, and (d) observation statements. Metaphysics were vehemently opposed on every front, especially within social science. This entailed an acceptance of empiricism and an emphasis on Kant's "Verstand" or reason aimed at empirical knowledge (Bryant, 1985, p. 113). The LPs

---

[48] It is interesting to note that the status of Karl Popper as a positivist is debated by some although generally he is branded as a positivist despite his denial of allegiance to the logical positivism. Bryant (1985, pp. 114-116) is much more sympathetic towards Popper and correctly identified aspects in Popper's thought that distinguishes him from the logical positivists. He denied the possibility of foundations for knowledge or science, his theory emphasised fallibility, and he espoused falsification in direct contrast to verification, and so on (Maree, 1990). However, the one aspect he has in common with the logical positivists is the denial of essences.

[49] Schlick (1981c, p. 109) proposes the adding "logical" to positivism to indicate their brand of positivism, or using the phrase "consistent empiricism".

[50] (Hibberd, 2010, p. 39 and 41) calls this characteristic l*ogicality*: the positivists had a particular view of the role of logic in science. Two strands can be discerned, namely, a formal and a logicist view (Friedman, 1998).

[51] Quoted in Bryant (1985, p. 111).

had a strong belief in the unity of the sciences and questions of value were regarded as meaningless (Bryant, 1985, p. 114).

Another important difference between classical and LP empiricism is the place of psychology in explaining why knowledge is based on empirical experience. The LPs focussed on logic as the way to analyse statements and clarify meaning. Logic enables one to reduce statement to their most basic form which is where sense experience meets these basic statements (cf. Hanfling, 1981b, p. 5). The LPs had an empiricist conception of language and knowledge. The connection between language and experience provides the constitution of knowledge. One would suppose, due to the composite phenomenon[52] mentioned above, that LP would have a unified view of language, experience and knowledge but this is far from true. There was, for instance, much debate between LPs about protocol sentences or basic statements.

3.3.2.1   Verificationism and empiricism

One of the key issues in LP was the problem of demarcation, i.e. the problem of distinguishing between science and non-science or in the nomenclature of positivism, *metaphysics* (Boyd, 1991a; Schlick, 1981c, p. 84). This issue culminated in the goal of eliminating metaphysics by means of the verification. Verificationism consisted in (a) the verification theory of meaning and (b) the view of knowledge empiricism (Boyd, 1991a, p. 5). The first aspect requires an understanding of the positivist's view of the given or the real, and the project of eliminating metaphysics. The second relates the process of verification and the rational reconstruction of theories.

(a)   Verification theory of meaning

The verification theory of meaning refers to the ability to indicate the conditions under which one would regard a particular statement as true, viz. as verified or falsified:[53]

> *It is the first step in every kind of philosophizing, and the basis of all reflection, to realize that it is absolutely impossible to give the meaning of any claim save by describing the state-of-affairs that must obtain if the claim is true. If it does not obtain, then the claim is false. The meaning of a proposition obviously consists in this alone, that it expresses a particular state of affairs* (Schlick, 1981c, p. 88).

---

[52] It is thus assumed that logical positivism presents a unified front in terms of their views of what science is.

[53] Strictly speaking, the term "falsified" is not used correctly here. What we mean is that a statement should be proven true *or false* which is still verification but with a symmetrical but opposite outcome. Falsifying as defined by Popper is asymmetrical to verification in a sense that true-false in the case of verification is not (Maree, 1990).

This is another way of expressing the positivist declaration of the verification principle: *"the meaning of a statement is the method of its verification"* (Waismann, 1981, p. 51). [54] Verification implies a reference to experience of the "immediately given" (Bryant, 1985, p. 112): *"The **meaning**[55] of every proposition is ultimately determined by the given alone, and absolutely by nothing else"* (Schlick, 1981c, p. 89). Thus, statements verified by experience are *meaningful*.[56] Statements must be reduced to some form of registered experience. The reduction is not enough by which I mean the emphasis is not on the reduction but on the goal of the reduction—it must make a testable[57] difference, i.e. it must be demonstrated in the given as true or false (Schlick, 1981c, p. 89).

The LPs referred to these basic statements as elementary or protocol sentences and initially, this requirement landed the LPs in solipsism because the basic statements refer to a person's sensory experience (having the same status as subjective experience of thought and feelings): these cannot be immediately conveyed to other persons (Bryant, 1985, p. 112). The solipsism was countered by views of language that aimed at showing that form but not content can be communicated (see below). Carnap, for instance, avoided solipsism by locating personal events within publically accessible space-time coordinates, thus, making inter-subjectivity part of a physicalist view of the world (Bryant, 1985, p. 113). If this is the case, then there are no social and human sciences but they fall under one domain, namely, a strict physicalism[58] that allows only for physics as proper science. The only allowable psychology is then behaviourist in nature.

(b)   Metaphysics and the given

One should not make the mistake to think that metaphysics consists of only statements concerning a transcendent reality such as God—these statements are by definition not verifiable or matchable against confirmable facts (discounting of

---

[54] The statement is ascribed to Wittgenstein (cf. Hanfling, 1981a, p. 15; Kraft, 1953, p. 31).

[55] Author's emphasis.

[56] As Waismann (1981, pp. 51-55) pointed out, under certain circumstances we do understand the meaning of a sentence without reference to empirical experience (such as "the man died 5 hours ago"), but in other context, such as physics, the meaning only becomes clear when we can indicate its verification.

[57] *"The content of our thesis is in fact entirely trivial (and that is precisely why it can give so much insight); it tells us that a statement only has a specifiable meaning if it makes some testable difference whether it is true or false. A proposition for which the world looks exactly the same when it is true as it does when it is false, in fact says nothing whatever about the world; it is empty, it conveys nothing, I can specify no meaning for it. But a testable difference is present only if there is a difference in the given, for to be testable certainly means nothing else but 'demonstrable in the given'"* (Schlick, 1981c, p. 89).

[58] Carnap (1981a, p. 123) called the applicability of one language (i.e., the thing-language) to all the sciences, physicalism.

course, the religious person's experience of hearing the voice of God or the like—no one can deny the reality of her religious experience). A proposition such as "God exists" is not empirically verifiable according to the positivist's criterion. However, metaphysical statements with regard to the nature of being and substance, etc. also cannot be verified against empirical experience (cf. Ayer, 1971). In fact, Ayer (1971) ascribes these issues to the improper use of grammar and errors in reasoning. When, for instance, Heidegger talks about Being, a system of philosophy is developed where *"... there is no place in the empirical world for many of these 'entities', a special non-empirical world is invoked to house them"* (Ayer, 1971, p. 59). This argument has force precisely due to the lack of clarity theorists exhibit when explaining their ideas.

In this regard, Schlick (1981c, p. 110) indicated that metaphysical claims (such as that there are transcendent objects or external reality over and above the empirical) are not meaningful which is different from saying that they are false. The meaning of statements can only be tested by empirical experience, resulting in a true or false claim, but metaphysical claims cannot be tested in this way, which is why they are "devoid of meaning." At most the positivist makes a distinction between internal and external reality with reference to internal psychological states and external things such as rocks and people. The ontological status of both[59] is subject to an empirical realist requirement, namely, that at some stage the reality of something, or the statement about that thing, needs to be located in an empirical experience. Hence, *"Logical positivism and realism are therefore not opposed; anyone who acknowledges our principle must actually be an empirical realist"* (Schlick, 1981c, p. 109).

The positivist is restricted to appearances or "the given" but Schlick (1981c, pp. 84-85) immediately warns that one should distinguish the metaphysical description of real being and appearances from that of the positivist understanding of the given.[60] The positivist understanding is not merely the metaphysical view minus transcendence, i.e. real being is that which we can access only by inference whilst appearance or the given implies a lesser sort of being—the positivist then merely leaves out the "real being" or metaphysical part.

One question that arises is what the status of things such as states is? For example, if an object were electrically charged how would one observe it? According to Carnap (1981a, p. 126) the conditions under which a thing could become charged

---

[59] Cf. Schlick (1981c, p. 101).

[60] *"With this we seem to have arrived at the fundamental concept of the positivists, for they, too, are always talking of the 'given', and state their basic principle mostly by saying that, like the scientists, the philosopher must abide throughout in the given, that an advance beyond it, such as the metaphysician attempts, is impossible or absurd.*

It is natural, therefore, to take the given of positivism to be simply identical with the metaphysician's appearances, and to believe that positivism is at bottom a metaphysics form which the transcendent has been omitted or struck out ..." (Schlick, 1981c, pp. 84-85).

can be described and observed as well as the results of this situation (discussed fully in paragraph 3.3.2.2(c) below). Thus, an object that is electrically charged attracts other bodies. However, a thing's state and its attracting other things are not the same, in the same way as anger and a display of anger are not the same:

> *In both cases that state sometimes occurs without these events which are observable from outside; they are consequences of the state according to certain laws and may therefore under suitable circumstances be taken as symptoms for it; but they are not identical with it* (Carnap, 1981a, p. 126).

(c)   Knowledge empiricism

Knowledge empiricism[61] refers to the grounding of knowledge or statements of fact in sensations or observations. One implication is that the empirical significance of a sentence can be determined by a crucial experiment (cf. Boyd, 1991a). If two statements make observational claims then the more adequate sentence is the one that predicts the outcome of the experiment better. According to Boyd (1991a) combining the verifiability theory of meaning with knowledge empiricism has two consequences. The first is (a) if a non-analytic sentence does not have observational consequences, then that sentence or claim is meaningless. For example, my claim in mid-summer that the snow outside my window is white is meaningless. This statement is simply not true because by looking I can observe dust and sweltering heat. The second consequence is (b) if two statements are empirically equivalent, then one cannot determine the better or more adequate statement by means of a crucial experiment. Both have the same observational consequences.

(d)   Verifying claims

Let us for a moment reflect on what verification means in practice: (a) if we claim that it is raining outside then the verification ought to be easy enough. One can indicate the conditions under which the statement "it is raining outside" can be true or false. (b) What is the case with "there are mountains on the opposite side of the moon"? Given the fact that the opposite side of the moon was first photographed by the Soviet probe Luna 3 in 1959 ("Moon," 2006), we must ask the question from Schlick's perspective when he used this example in 1932 (see Schlick, 1981c, p. 83). His conclusion is that verification is thinkable (or logically possible) although not necessarily empirically executable. The statement "there are mountains on the other side of the moon" is meaningful and as Schlick (1981c, p. 90) said, it will remain meaningful even if we know on scientific grounds that humans could never reach the moon. Finally, (c)

---

[61] Knowledge empiricism must be distinguished from Bhaskar's (1975) empirical realism. See following chapters.

But if someone would advance the claim, that within the electron there is a nucleus which is always present, but produces absolutely no effect outside, so that its existence in nature is discernible in no way whatever—then this would be a meaningless claim (Schlick, 1981c, p. 90).

If one could establish that the existence or non-existence of the nucleus would have no effect on reality, then this hypothetical entity is without meaning: *"In this case the impossibility of verification is actually not a factual, but a **logical** impossibility, since the claim that this nucleus is totally without effect rules out, **in principle**,*[62] *the possibility of deciding by differences in the given"* (Schlick, 1981c, p. 90).

(e)   Rational reconstruction of theories

Theories can be reconstructed to flesh out their observational consequences. This is called the *rational reconstruction of theories* (cf. Boyd, 1991a). Any two theories can be reconstructed given a sufficient number of auxiliary hypotheses and statements to say the same thing. Nothing, however, can be said about the non-observational consequences of the theories. Positivism has an *instrumentalist*[63] view of theories—theories are not literary true. They have observational consequences that can be predicted from the theory. However, the unobservable parts cannot be verified.

According to Boyd (1991a) the rational reconstruction of theories requires background theories and auxiliary statements and this shows that the observational consequences of theories can only succeed within a broader context requiring more than simple observation statements. Therefore, contrary to the individualistic aim of positivism, i.e. that a single statement or theory or set of statements can be verified, it was realised that a number of background theories (having theoretical statements) are required *to establish the observational or empirical consequences of one theory.*

3.3.2.2   The role of language and protocol statements

(a)   Schlick's view of language

Schlick (1981d) made a distinction between structure and content (or form and content) to express his particular view of language and how language expresses experience. In order to express anything at all structure is required: *"It is that kind of thing with which Logic is concerned, and we may, therefore, call it Logical Order, or simply Structure"* (Schlick, 1981d, p. 131). This *"thing with which logic"* is concerned reveals what the logic in Logical Positivism stands for, namely, the concern with structure or

---

[62] Author's emphasis in both cases.

[63] Instrumentalism opposes realism in terms of their view of the truth of theories (Niiniluoto, 2015). The latter comes in various versions. For instance, naïve realists might hold theories to be mostly true while other versions acknowledge verisimilitude or truthlikeness (Niiniluoto, 2014). Instrumentalism is close to a pragmatist view about theories: whatever works is fine; theories need not be literally true.

order. It is not temporal or sequential order or a *particular* structural arrangement with which Schlick is concerned with but with order *as such,* expressed as any particular arrangement of elements. He illustrates it with the example of a song. The sheet music, vocal chords of the singer, or playing a vinyl record are very different in terms of how they present structure but in the end the music of a song is captured by particular arrangements of elements forming a structure (we obtain the same melody in each case). Thus, the *meaning* of something, facts, or objects can be expressed by its structure. This structure can be communicated and with different modes of communication. The structure remains structure nonetheless. This logical structure expresses everything we need to know about an object.

First, properties[64] can be described such as the shape of a leaf,[65] its colour, and so on. Second, not only properties but also qualities can be communicated and expressed. This structure [66] involves internal and external relations, i.e. some properties can be expressed as internal relations such as the colour of an object in relation to colours of the spectrum within which it falls. Internal relations state a relation between aspects that cannot exist without each other. Internal relations express qualities (cf. Schlick, 1981d, p. 135). The green of a particular leaf can be related to a range of greens in the colour spectrum between yellow and blue. However, these internal relations are not communicated but express themselves when describing the external relations, quite similar to grammar that is not communicated but shows itself in language usage (Schlick, 1981d, p. 136). External relations refer to an object's properties and qualities in relation to other objects and properties. For instance, the green of the leaf is similar to green of Sarah's dress. Schlick tried to cover all the bases of the expressive use of language so that so-called content (or the greenness of our leaf) became vacuous.

On the one hand, *structure* can be communicated, on the other hand, *content* cannot. What Schlick (1981d, pp. 131-136) had in mind with this distinction is the classical problem of communicating a certain quality to someone else such as the greenness of something: "… *that ineffable quality of greenness which appears to constitute its very nature, its true essence, in short its Content*" (Schlick, 1981d, p. 137). One can communicate or express colour to a blind man but never the essence or content of greenness. This private experiential quality or understanding cannot be

---

[64] Swoyer and Orilia (2014) equate properties and qualities. They are, along with relations, predicables, i.e. a characteristic of something. Daly (2011) includes features, qualities and attributes as properties or entities of things. The issue of universals and particulars become pertinent here since some believe that replicable properties are characteristic of universals whilst others (nominalists) hold that properties are instantiated by particulars.

[65] To use Schlick's own example.

[66] Sounds like structural realism and indeed Gower (2000) points out the link between early structural views and scientific structuralism. In fact, some form of Schlick's positivism can sustain realism (Gower, 2000, p. 102). See paragraph 5.2.3 later on.

communicated. It can only be experienced, or in other words, the structure can only be filled in by one's own interpretation and it is this very personal experience or filling-in that cannot be communicated. This is, of course, not to say that Schlick attaches any value to the idea of content. On the contrary, any question about content, according to Schlick (1981d, p. 149), is meaningless or metaphysical[67]—of course, meaningless in the sense of not being inter-communicable, but is it obvious or experienced by the communicator?

To first focus on the first part of the last sentence above: inter-communicability is a *sine qua non* for language and communication. Nothing means anything except by agreement. Thus, Schlick acknowledges that signs, whatever they may be, letters of the alphabet, pictures or objects, stand for something else or symbolises something that can be conveyed or expressed (however, that what is expressed is not content!). The purpose of language is *"… to make the listener or reader acquainted with the fact which is to be communicated to him"* (Schlick, 1981d, p. 145). Schlick follows this statement with the question whether it is then not better to show the fact, or provide the object as a means of circumventing language? By showing the object nothing more is achieved than communicating because showing within a context is expressing something (again not content) to be grasped by the listener or reader. Language, whether by normal speech, signs or other means of communicating, is sufficient to express facts.

Language is not a self-contained system but it expresses facts. Facts are then those atoms of meaning that can be compared to the empirical world. The enterprise of verification, elimination of metaphysics, the foundation of knowledge and the like are all problems and questions related to the conception of language and how one can distinguish between meaningful and meaningless statements. As said above the problem is to find the simplest meaning unit which links experience and knowledge. The LPs searched for basic statements which provides this link and which can be viewed as the certain foundation of science. Schlick had a particular view of this which links with his view of language discussed above.

(b)   The role of protocol statements in science

For Schlick (1981b) the problem of protocol sentences is intertwined with the problem of the foundation of knowledge. Protocol sentences can provide certainty but he realises that a number of knowledge statements can be corrected and do not have an infallible and certain status. Even certain statements that have the form of claims are hypotheses and by nature a hypotheses cannot be a certain fact. He made a

---

[67] *"This is not because content is too difficult to get at, or because the right method of investigating it has not yet been found, but simply because there is no sense in asking any questions about it. There is no proposition about content, there cannot be any. In other words: it would be best not to use the word 'content' at all …"* (Schlick, 1981d, p. 149).

distinction between a number of types of statements, namely, protocol statements (or propositions), hypotheses, assertions, affirmations and observation statements. It seems as if these statements are not always strictly distinguishable but used to express their relation to the process of science and their status as certain and infallible "atoms" on which knowledge can be built. These statements are contrasted with the protocol sentence that

> … *originally meant those propositions which in absolutely simplicity, without any forming, change or addition, set forth the facts, whose elaboration constitutes the substance of all science, and which are prior to all knowledge, to every claim about the world* (Schlick, 1981b, p. 178).

This was the original meaning of a protocol statement: *the most basic statement reflecting a fact*. In some way the link between a fact and the statement was assumed but Schlick tried to tease out this link. It was also assumed that our knowledge or our statements *about* the facts could be uncertain and fallible but never the "raw facts." Raw facts, captured in protocol statements, supposedly form the incorrigible foundation of science (Schlick, 1981b, p. 179). However, this foundation seems to be much more slippery than assumed because of the corrigibility of knowledge on the one hand, and the factual atoms on the other: even these atoms of facts can be corrected when it clashes with new facts. This much Schlick (1981b, p. 182) could concede to critics of the idea of protocol sentences.

The problem, then, is what the nature and function of these protocol sentences are if they lost their original function as a "yardstick for truth," i.e. elements, which can be regarded as true, against which other statements be compared and upon which a scientific theory can be built (cf. Schlick, 1981b, p. 182). An alternative cannot be a coherence theory of truth, which according to Schlick (1981b, p. 184) is vacuous because it implies that statements are true within a theory if they do not contradict each other. This cannot be correct since lack of logical contradiction cannot imply truth! Even a fairy tale can be coherent in this sense without necessarily being true.

Schlick (1981b, p. 189) found the fundamental statements of knowledge in observations that stand in the beginning of the scientific process.[68] An observation is made and on these observations other propositions are inferred. These propositions follow logically from the observations (or protocol propositions) and are hypotheses. So the body of knowledge consists of a number of related statements that either reflect the original protocol sentences or are derived from them. If these derived

---

[68] The issue of finding raw facts and how they are represented in order to be communicated forms the basis of a representationalist theory of cognition as well.

statements say the same as observation statements that the scientist obtained at a later stage, then the scientist has a law.

Thus, the process of hypotheses derivation proceeds with induction—which Schlick (1981b, p. 190) calls *"methodologically guided guessing"*—and predictions can be made from these hypotheses. If the findings, i.e. observations noted as protocol propositions, accord with the initial protocol propositions then one has successfully identified a law. The moment a hypothesis, i.e. the claim derived from the initial protocol sentences is confirmed by a subsequent observation also called an affirmation or *"Konstatierung"* (Schlick, p. 190), then the hypothetical statement is verified and for that moment it is *certain*. As soon as we move away from this moment in time the process of knowledge constitution begins again.[69] The verification moment is a joyous one and Schlick couches his descriptions in emotional and subjective terms: "joy in verification," verification fills us with "satisfaction" and, finally, when we make a prediction that is affirmed by actually observing the fact, *"we pass an observational judgement that we **expected**, and have in doing so a sense of **fulfilment**, a wholly characteristic satisfaction; we are **content**"* (Schlick, 1981b, p. 191).[70]

Affirmations seems to be observation statements which are the same as protocol sentences but Schlick changes the so-called usual understanding of protocol sentences as those certain and absolute atoms of knowledge that never changes and which form the firm foundation of scientific knowledge. Verification establishes meaning and meaning is understood only when an affirmation is compared with the facts.[71] Both the truth and the meaning are *grasped*[72] in this one act of *Konstatierung*. Schlick moves the foundation of science away from a logical enterprise, namely, as a set of statements that need to logically cohere. Certainty and corrigible statements are related in a way that allows the process of knowledge construction to evolve: protocol sentences cannot be the static components only at the beginning of the scientific process upon which an edifice is built and as soon as that one act of

---

[69] *"**Finality** is a very suitable word to describe the significance of observation statements. They are an absolute end, and in them the current task of knowledge is fulfilled. That the joy in which they culminate, and the hypotheses they leave behind, are then the beginning of a new task, is no longer their affair. Science does not rest on them, but leads to them, and they show that it has led aright. They are the absolutely fixed points; we are glad to reach then, even if we cannot rest there"* (Schlick, 1981b, p. 192). Author's emphasis.

[70] Author's emphases.

[71] More specifically" *"In other words, I can understand the meaning of an 'affirmation' only on and by the way of a comparison with the facts, i.e. a carrying-out of the process required for the verification of all synthetic propositions. But where as in all other synthetic statements, establishing the meaning and establishing the truth are separate, clearly distinguishable processes, in observation statements they coincide, just as they do in analytic judgements … Along with their meaning I simultaneously **grasp** their truth"* (Schlick, 1981b, p. 194). My emphasis.

[72] See quote in footnote 71 above.

observation has been effected a "protocol" has been formed (whether it is written down or committed to memory is irrelevant) (Schlick, 1981b, p. 189). From then on all statements formed based on that instance of *Konstatierung* are "mere" hypotheses. Certainty is also now interweaved in the process of science but the main point is— and this is what makes this enterprise strictly Humean—the moment an empirical observation is made which agrees with a claim, then certain knowledge is arrived at. Thus, *claims for knowledge must be confirmed by sense data.* Schlick (1981a, p. 197) puts it beautifully: *"I found, for instance in my Baedeker*[73] *the statement: 'This cathedral has two spires,' I was able to compare it with 'reality' by looking at the cathedral, and this comparison convinced me that Baedeker's assertion was true."*

(c) Carnap's view of protocol sentences[74]

Carnap (1981b, p. 152) described protocol sentences as those statements registering the scientist's (such as a physicist or psychologist),[75] experiences.[76] Thus, primitive or basic observations are written down in a protocol and these basic statements of observations are the protocol sentences or statements.[77] This initial

---

[73] Refers to the travel guides Karl Baedeker published between 1827 and 1859 that covered most of Europe. His sons carried the enterprise further ("Baedeker, Karl," 2006).

[74] *"A primitive protocol would perhaps run as follows: 'Arrangement of experiment: at such and such positions are objects of such and such kinds (e.g., "copper wire"; the statement should be restricted perhaps to "a thin, long, brown body" leaving the characteristics denoted by "copper" to be deduced from previous protocols in which the same body has occurred): here now pointer at 5, simultaneously spark and explosion, then smell of ozone there'. Owing to the great clumsiness of primitive protocols it is necessary in practice to include terms of derivative application in the protocol itself. This is true of the physicist's protocol and true in far greater measure of the protocols made by biologists, psychologists and anthropologists. In spite of this fact, questions of the justification of any scientific statement, i.e. of its origin in protocol statements, involve reference back to the primitive protocol.*

From now onwards 'protocol statements' will be used as an abbreviation for 'statements belonging to the primitive protocol'; the language to which such statements belong will be called the 'protocol-language'. (Sometimes also termed 'language of direct experience' or 'phenomenal language'; the neutral term 'primary language' is less objectionable.) In the present state of research it is not possible to characterize this language with greater precision, i.e. to specify its vocabulary, syntactical forms and rules. This is, however, unnecessary for the subsequent arguments of this paper. The analysis which follows is a sketch of some of the views as to the form of protocol statements held at the present day by various schools of thought" (Carnap, 1981b, p. 153).

[75] This telling example of Carnap's shows that he had a view of psychology as a science within the positivist framework. The LPs confidence in regarding psychology (and other related special sciences) as a science probably motivated psychologists to mould psychology in the image of positivism.

[76] *"Verification is based upon 'protocol statements' … This term is understood to include statements belonging to the basic protocol or direct record of a scientist's (say a physicist's or psychologist's) experience. Implied in this notion is a simplification of actual scientific procedure as if all experiences, perceptions, and feelings, thoughts, etc., in everyday life as well as in the laboratory, were first recorded as 'protocol' to provide the raw material for subsequent organization"* (Carnap, 1981b, p. 152).

[77] *"Science is a system of statements based on direct experience, and controlled by experimental verification. Verification in science is not, however, of single statements but of the entire system or a sub-system of such statements.*

protocol formed the raw data for the scientist and sentences derived from these primitive protocol statements form part of the organising of a body of knowledge. Thus, even if certain words are used in the protocol that interpret, summarise, or clarify the initial observations then they are no longer regarded as protocol sentences. An example of a protocol sentence is "joy now" or "red here now" (cf. Carnap, 1981b, p. 154). As Carnap (1981b, p. 153) said, the primitive protocol is clumsy, especially with the softer sciences (e.g. psychology and anthropology) and necessitates some interpretation or "derivations."

Carnap (1981b, p. 150) distinguishes between the material and formal modes of language. The material mode refers to objects, content, or meaning. The formal mode refers only to syntax. In order to translate from one language to another only the formal mode is required. Thus, constituting a definition language involves specifying vocabulary and syntax. The syntax specifies the rules how the words form sentences and sentences can be transformed in other sentences. In this process content[78] is not required: *"the demand thereby made in the material mode is satisfied by specifying the formal rules which constitute the syntax. For the 'meaning' of a word is given either by translation or by definition"* (Carnap, 1981b, pp. 150-151). Translation involves rules for transforming one word in one language into another word in a second language while a definition involves a rule for translating words into others in the same language (Carnap, 1981b, p. 151). Carnap (1981b, p. 151) is convinced that using only the formal mode of language will avoid most problems in philosophy (especially amongst his positivist brethren) because pseudo-problems are caused by using the material mode of language.

Carnap further distinguishes between a physical language which refers to the empirical nature of objects and events, and other languages such as the protocol language which is made up of the experiences in terms of protocol sentences of the individual scientist: there is thus a physical language that refers to physical things and protocol language which refers to experienced content (Carnap, 1981b, p. 159). The *thing-language* is a sub-language of physical language and pre-scientific language. It involves the language when speaking about observable properties. "Hot" and "cold" are *observable-thing predicates* but "temperature" is not directly observable because one

---

Verification is based upon 'protocol statements', a term whose meaning will be made clearer in the course of further discussion This term is understood to include statements belonging the basic protocol or direct record of a scientist's (say a physicist's or psychologist's) experience. Implied in this notion is a simplification of actual scientific procedure as if all experiences, perceptions, and feelings, thoughts, etc., in everyday life as well as in the laboratory, were first recorded in writing as 'protocol' to provide the raw material for subsequent organization. A 'primitive' protocol will be understood to exclude all statements obtained indirectly by induction or otherwise and postulates therefore a sharp (theoretical) distinction between the raw material of scientific investigation and its organization" (Carnap, 1981b, p. 152).

[78] Content refers to meaning or sense and is not used in the same way as Schlick does above.

needs an instrument to register temperature (Carnap, 1981a, p. 121). One also gets *disposition-predicates* that indicate the behaviour of thing-predicates under certain conditions and it involves descriptions such as "elastic" or "soluble." However, one can reduce the disposition-predicates to observable-thing-predicates by way of the method of determination described below. Thus every term in the physical language can be reduced to the thing-language by reduction or direct observation.

The concept and process of reduction is important for Carnap because with this tool he can argue for a movement from language to empirical experience. Reduction involves stating one term in terms of another or a set of other terms. However, it is not a mere conceptual exercise because reduction involves specifying the conditions under which one term can be reduced to another. This means that we need to explicate the empirical conditions under which it would be valid to speak of the one standing in for the set of terms. To define a chicken as a feathered biped, which lays eggs is valid only if, when using the term "chicken," we observe "feathered," "biped," "laying of eggs," etc. "Observation" can be better specified. On the one hand, simple observation could suffice but on the other hand, experimentation might be necessary.

The *method of determination* of a term is a way to establish whether a statement can be reduced to others: *"Whenever, we know an experimental method of determination for a term, we are in a position to formulate a reduction statement for it"* (Carnap, 1981a, p. 119). For instance, an experimental term is determined (i.e., specified as amenable to reduction) if (a) the *conditions* of its experimental measurement are specified, and (b) the required *outcome* of the experiment is indicated. In other words, if we know that the construct "temperature" can be measured under certain conditions and with certain instruments, and that certain behaviour of the thermometer would indicate temperature, then temperature can be reduced to statements that include the conditions and results. A physicalist reduction would involve the following. If we have a term such as temperature or another object or event whose properties (P) we would like to reduce to conditions (C) and results (R), the formulation of a conditional would look as follows: if C at time t, then P at time t; R at time t. Thus, P was reduced to C and R (cf. Carnap, 1981b, p. 120). According to Carnap (1981b, p. 120) the form of the statement in biology or psychology will be *"To the stimulus C we find the reaction R as a symptom of P."*

Consequently, the thing-language within which the direct observational and experimental conditions can be indicated serves as the common substrate between every-day language usage and of scientific physical language. Reduction from the physical language is possible to the thing-language and eventually to the observational-predicates (cf. Carnap, 1981a, p. 121). In this way the translation between concept and experience is done.

Two descriptions of an object or event can be given, namely, from a protocol (or subjective experiential) perspective and from a physical perspective. Compare "the rod feels warm to me" and "the kinetic energy of the molecules increased," then it ought to be clear that somehow the two speak of the same event. The physical statement specifies the content of the experiential statement. The problem is that relating the content (the sense, meaning or material aspect of language) in the protocol language with the physical language in this way, we are lead to a contradiction. Subjective experience cannot be shared, thus, the physical description cannot be true for two persons experiencing a particular event. Clearly, this is not sensible and Carnap's way out is to require one to use the formal mode of speech rather than the material. Protocol sentences should then be formulated in the formal mode thus ridding the language of content or subjective modes of speech. An example used by Carnap (1981b, p. 159) is that rather than speaking of "sensations of colour" expressing the material mode, one should speak of "protocol statements involving names of colours," an expression in the formal mode. The formal mode of protocol language can be translated into the physical language without involving meaning: "perd" can be translated as "horse" and in the same way "names of colours" can be translated as "reflecting light of different frequencies."

3.3.2.3   Reduction in psychology according to Carnap

Given what was said above on reduction and the thing-language, one can, according to Carnap (1981a, p. 125), reduce psychological terms to the thing-language: *"If for any psychological term we know either a physiological or a behaviouristic method of determination, then that term is reducible to those terms of the thing-language"* (p. 125) (see the discussion in paragraph 10.2.6 below).

This means that the process of reduction can be carried out as soon as we can specify the conditions and results of observational or experimental terms. To recall the statement above: *"To the stimulus C we find the reaction R as a symptom of P."* Reduction can be applied where three psychological approaches are used, namely, physiological, behaviouristic and introspective (Carnap, 1981a, p. 123).

(a)   The biological approach is used where brain function and related physiological processes are examined that impact on psychological behaviour. Thus, reduction is easily effected here because observable aspects can indicate stimuli and responses.

(b)   The behaviouristic approach can also with slightly more translation be indicated in the thing-language. For instance, if we have a full understanding of the physiological conditions, which prevail when a person is angry, then the biological language would be sufficient to effect the reduction. Carnap starts from the premise that we know what conditions should apply so that we can ascribe an emotion such as anger to a person (or organism) despite those

situations where a person exhibits self-control or cannot display anger for whatever reason. Consequently, if a person acts in a certain way or displays certain physiological reactions, which under certain conditions need to be measured, we would know that he or she is angry. Accordingly, there exists a criterion that can be used to determine reducibility of psychological terms to biological or thing-language.

(c)   The introspective approach is probably more difficult because we are dependent on the subjective reports of persons. Carnap shows that the occurrence of anger, i.e. John's anger at 10:00 yesterday, is not what is at issue. If there were no one present, his anger could not have been observed. The issue then is anger as a *kind* of process or anger in general. A number of subjects can, therefore, be studied for anger behaviour. However, Carnap (1981a) concludes with a further step:

> … *in order to come to a correct formulation of the thesis, we have to apply it not to kinds of processes (e.g. anger) but rather to the terms designating such kinds of processes (e.g. anger). The difference might seem trivial but is, in fact, essential* (p. 125).

This means that not even kinds of psychological events, such as anger being displayed, are the object of our reduction. It is not events but terms that are under consideration. To use a version of Carnap's own example: one can start off with the reference to a certain and particular event, "John was angry at 10:00 yesterday." Single events like these cannot qualify for reduction to the thing-language,[79] but John himself can state "at such and such time I was angry" and this statement counts as an intersubjective, observable and behavioural symptom for his anger, namely, "anger": "… *the utterance by speaking or writing of the statement 'I am now (or: I was yesterday) in the state Q,' is (under suitable circumstances, e.g., as to reliability, etc.) an* **observable symptom** *for the state Q*" (Carnap, 1981a, p. 126).[80] Carnap (1981a) concludes:

> *Hence there cannot be a term in the psychological language, taken as an intersubjective language for mutual communication, which designates a kind of state or event without any behaviouristic symptom. Therefore, there is a behaviouristic method of determination for any term of the psychological language. Hence every such term is reducible to those of the thing-language* (p. 126)

---

[79] Because no one can observe it except John. No one would know John was angry if there was no-one there except if he wrote it down or told someone about it. Note that the kind of event is not denied by not being observed.

[80] My emphasis.

Thus, all psychological language can be reduced to thing-language. The problems of subjective and first-person experiences do not arise because the behavioural symptom of private experience is the verbal statement of a person that serves as statements that can be reduced.

According to Hanfling (1981b, p. 16) Carnap views language as encapsulated—it is a formal syntax without the necessity to actually connect with empirical experience despite the verbiage about thing-language, physical language and experience. The not-so-subtle move from "kinds of events" to "terms" illustrates his view. This is where Schlick differs from Carnap. Schlick, as we have seen above, cannot do away with ostensive definition—there are facts and language refers to facts; it is not a self-contained system.

3.3.2.4   Causality

The Logical Positivist view of causality is based on the Humean view. Hume viewed causality as observable patterns in events where one event followed another. Two events that precede the effect should be similar in most respects. Hume's view of causality is grounded in the psychological nature of man to form perceptions of patterns of events thus deducing that the one event caused the other. The positivists did not agree with the psychological motivation of tendency forming but based it on laws. The first aspect to notice is that Hume, as is the case with positivists and other empiricists, did not believe in the existence of unobservables. Thus, any grounding of causality in unobservable mechanisms, powers or tendencies is rejected by them. Causality as such points to an unobservable power or mechanism and the positivist, in the words of Boyd (1991b), has to *"rationally reconstruct"* the concept of causality to exorcise any unobservable aspect.

The Humean notion of causality is based upon the constant conjunction of events.[81] There must be a pattern of events and this pattern must be observable. No ascription to an underlying mechanism such as causality can be made and it must be reduced to the psychological propensity to associate ideas that occur in close proximity. This can be loosely called a *natural* definition of causality to distinguish it from an empiricist definition (Boyd, 1991b, p. 356). By removing references to unobservables and grounding causality in something other than the psychological, an *empiricist* definition can be found. According to Boyd (1991b) such a notion can be found in "lawlikeness," i.e. a law or statement resembling a law relating a pattern of events. Boyd (1991b) distinguishes between Humean and its variants' conceptions of law and preanalytic conceptions. A preanalytic or prescientific view could entail a view of lawlike as *"…those generalizations that attribute the predicted observable regularities*

---

[81] This will be discussed and criticized more fully in the following chapters.

to underlying mechanisms that are relevantly similar to those already postulated in well-confirmed generalizations" (Boyd, 1991b, p. 357).

3.3.2.5 The Frankfurter Schule and LP

Bryant (1985, pp. 116-132) discussed the Frankfurt School's opposition to Logical Positivism, and it would be helpful to summarise their main points of difference with LP. (a) Scientism, i.e. the claim that only science can provide knowledge is contested by the Frankfurt School (Bryant, 1985, p. 119). (b) Related is the positivist conception of what science is. Bryant (1985, p. 120) quotes Keat (1981, pp. 16-17): *"science aims at the explanation and prediction of observable phenomena by showing that these are instances of universal laws that apply in all regions of space and time."* Bryant says this statement expresses a form of the deductive-nomological model of Hempel. The criticism from the Frankfurt School entails the dependence on one causal relationship instead of acknowledging many, and pointing out that other types of relationships can exist between social phenomena (such as dialectical, functional and relations of meaning) (Bryant, 1985, p. 120). A further point is the positivist reference to universal applicability of laws with no regard for historical change; Bryant (1985, p. 120) says *"It assumes a structure of being whose existence is independent of historical changes."* A last aspect of the positivist view that concerned the Frankfurt School was the anti-realism evident in the emphasis of observation and negation of metaphysics.

The Frankfurt School opposed the view of a theory-neutral language as espoused by the positivists. Bryant (1985, p. 121) made the observation that the case for the utilisation of theory-neutral language in theories of social science was probably overstated. A far greater problem is the positivist insistence on empirical data in social science at the expense of reason, in this case, critical reason. The Frankfurt School also rejects the idea of the unity of science whether by ontological or epistemological means, i.e. unity of being underlying social and natural sciences or a common method utilised by both (cf. Bryant, 1985, pp. 122-123). Finally, it rejects the separation of facts and value; value-free science, and specifically value-free social science, is not possible.

3.3.3 *Instrumental positivism*

Bryant (1985, p. 133) coined the term "instrumental positivism" with reference to positivism in American sociology: it is "instrumental" because of its emphasis on research instrumentation and "positivist" because of complying with the requirements of natural science. Bryant discussed the development of a particular brand of positivism that developed in sociology in the United States from the late 1920s to 1930s. With the rise of post-positivist theories in science in general—I am referring to Kuhn (1996) and the related authors (Feyerabend, 1993; Lakatos & Musgrave, 1974; Rorty, 1979)—since the 1960s, instrumental positivism came under increasing attack. A brief reading of Bryant (1985, pp. 133-173) will show that with

76

key figures in the early development of sociology in America the quest for making sociology a rigorous science on par with natural science was prominent. What was believed to be scientific values such as objectivity, rigorous method (presumably experimental where control of variables was possible) and quantification played a strong role in the ideal conception of sociological science. Against this very brief background and Bryant's own insistence that positivism be viewed within its historical and contextual situation, the basic tenets of instrumental positivism will be listed.

(a)   The use of statistical techniques and research instrumentation are emphasised (Bryant, 1985, p. 139). Over and above the obvious simulation of "proper" scientific techniques in a social science context, the use of statistics is based on a view of

(b)   society as nominalist (Bryant, 1985, p. 140). This means that an individualist conception of society underlies instrumentalist sociology. Because only particulars exist society is defined as a grouping or accumulation of individuals. It can be surmised that the survey methods developed by the early American sociologists flow from this nominalist concept of society: if society is merely a collection of individuals then an (statistical) averaging of those individuals ought to provide an indication of the state of a society. It can also be seen that survey or group statistical methods is at its basis nominalist: it harbours an individualist conception of the social. Later in this study the particular interpretation Bhaskar's (1998) gives to society will be examined along with the problematic nature of a nominalist concept—what he calls "voluntaristic"—of society.

(c)   Typical positivist views bolstered social science methods, namely, the use of induction, verificationism and incrementalism (Bryant, 1985, p. 141). The view that facts are verified in empirical work and then accumulated can be called incrementalism. Accumulating facts form bodies of knowledge about society. The way to verify facts is finding them in the quantified data of large-scale surveys and statistical analysis. Statistical inference is largely inductive and probabilistic, therefore, the idea that laws can be found from these patterns of data, although probabilistic, is quite consonant with the deductive-nomological method of Hempel (see footnote 47). Although laws can only be verified probabilistically hypothesis testing based on probability works well to establish the laws.

(d)   The early sociologists believed that values could not play a role in the process of doing science. The objective nature of natural science led to the belief that personal interests, bias values and so on ought not to influence particular processes in science. It was also believed that facts ought to be natural. Thus,

values need to be separated from the sciences because it can influence the choice of objects of investigation; it ought not to influence theory, conceptual work and especially empirical work (Bryant, 1985). Fact and value, therefore, need to be separated.

3.3.4   Summary and conclusion

Positivism and its variants from Comte to the logical empiricists have some common principles. Among others, they maintain the importance of empirical experience in establishing facts or knowledge. Despite the commonalities the views of Logical Positivists differed on a number of points. Carnap differed in his views from other Logical Positivists despite them known as the Vienna Circle. The Logical Positivists initiated a linguistic turn and in their delineation of language as formal and material (Carnap) or structure and content (Schlick) they tried to distinguish between the subjective and observational aspects of what constitutes knowledge of reality. They solved the problem of the subjectivity of meaning by externalising it: language needs to be reduced to empirical, i.e. observable, simple units and only then these expressions of fact are meaningful. Their empiricism extended to causality denying things such as unobservable mechanisms. Their solution was to formulate laws expressing the patterns of things display.

To recap the following points can be mentioned:

(a) Positivism's view of objectivity implies fact-value separation and is probably the most well-known aspect of positivism, namely, its insistence that objectivity lies in the suspension of values. In addition, positivism's *nomologicality* means science searches for objective and universal laws. Consequently, Hempel's deductive model for laws serves as explanation for regularities (Hibberd, 2010, p. 39 and 41).

(b) History has some examples of theorists that do not fall neatly within the positivist mould. The same person might harbour realist, positivist and even idealist assumptions for various reasons. I assume that our tendency to make absolute categorisations prevents us from making nuanced distinctions. Popper is an example in case. Elsewhere, I (1990) have argued that Popper is not the staunch positivist he is made out to be although from Gergen's perspective he is a positivist *par excellence*. Schlick's view of truth, protocol sentences and underlying realism is another example of how nuanced some positions are; positivists did not agree on a number of tenets.

(c) Knowledge is obtained from immediate experience.

(d) LP aimed to eliminate metaphysics. As will become clear later on, this means a fundamental opposition to realism.

78

(e)   Physics is the ultimate science that others must be reduced to in terms of method and epistemology.

(f)   Verification is the principle distinguishing between real or factual knowledge and metaphysical claims.

(g)   The verification principle of meaning stipulated that only those statements that can be linked to observable units are meaningful, hence, true.

(h)   Some positivists were well aware of the fallibility of knowledge claims. However, this did not, on average, deter them to try and establish the foundation for certain knowledge by means of various means such as utilising protocol sentences.

(i)   Protocol sentences are the simplest atom of meaning enabling one to capture a fact. Carnap's theory of language tried to bridge the gap between sense and reference. It is a mistake to think that the LPs were ignorant about language. They were aware of language's ambiguity. The lack of univocal meaning as a problem for the positivists became the strength for the constructionists. This situation is reflected in Wittgenstein's turn from logicality to language as a game.

(j)   The observable consequences of theories allowed some claims to be salvaged although currently or in principle not observable (such as the nature of the dark side of the moon). The point, though, is that every knowledge claim needs to be connected to some observable fact.

CHAPTER 4 CONSTRUCTIONISM

Constructionism arose as a reaction against positivism and foundationalism in science at the beginning of the previous century (Hacking, 1999; Laudan, 1996). The search for a scientific method that provides true knowledge and the search for an assured foundation for the edifice of scientific knowledge were overthrown by the work of, among others, Thomas Kuhn, Rorty and Feyerabend (Hacking, 2002; Laudan, 1996). There is no method that can lead to truth or certain knowledge and the basis of empiricism and positivism, namely, that observation guarantees true and certain knowledge, was abolished by these post-positivist theorists when they showed that observation is always theory-laden (Parker, 1998). This simply means that observation takes place through the lens of theories, background knowledge, assumptions and perspectives. It was subsequently realised that scientific work was done in social contexts and that if no universal criteria for truth, method and knowledge existed, these were socially determined and constructed. The shift from universal to local criteria emphasised the relative nature of science (Kvale, 1992). However, we need not dissolve science into a quicksand pool of relativism, because, as Sayer (1998, p. 122) says, theory-laden does not imply "*theory-determined*" and we may still have criteria for truth.[82]

4.1 Gergen

Kenneth Gergen (born in 1934) was responsible for bolstering social constructionism in psychology, especially after his first controversial publication in 1973 called "Social psychology as history" (Colman, 2008). As will be seen in the discussion of Bhaskar's theory of science, a version of constructionism is also popular in Critical Realism and some psychological constructionists and realists frequently cross boundaries (and swords) (see paragraph 2.4). One strategy to examine the value of, for instance, constructionist postulates is to identify modernist assumptions and then see how postmodernist critiques attack these assumptions. However, social constructionism as advocated by its most prominent and well-known proponent, Gergen, identifies some of these assumptions and then provides an image of science that can be deconstructed. In this section, I examine the assumptions Gergen holds as important, as well as discuss what he regards as characteristic of scientific knowledge.

According to Gergen (1999, p. 29), modernist assumptions lie in a "*sense of self*" as knowing, rational and autonomous, and in a view of objective knowledge, reason and moral foundations. Gergen indicates the limitations of these beliefs that boil down to the problematic relationship between language and reality.

---

[82] Van Fraassen's (1980, p. 14) reaction to theory-laden observation is that empiricists, like him, need not become realists!

4.2 Modernist assumptions

4.2.1 Primacy of the individual

One of the most important aspects that probably formed and influenced modernism and postmodernism in a fundamental way was the development of an awareness of the primacy and importance of the subject or individual. The development of the primacy of the self and the focus on the subject's ability to think for itself, observe, evaluate and choose actions developed in reaction to the authority of medieval rulers (Gergen, 1999, p. 7). The modernist development in the enlightenment was made possible by the development of the primacy of the individual.

The focus on the individual and his/her capacity to think and act resulted in a particular view of the self that is still prevalent. The most important consequence was on the power the subject had to discover his environment. The individual figured prominently in knowing his world in contrast to the authority of the church and state dictating beliefs and behaviour. Thus, a conception of rationality developed which formed the impetus behind enlightenment and modernism.

According to Gergen (1999, p. 8) a distinction for various reasons was formed between within and without, namely, the reality of the mind and reality of outside world. The result was a dualist ontology. The material world is deterministic[83] and involves cause and effect but the world of the mind is governed by free-will. The certainty that the predictability of the natural domain brought, required its preservation. Therefore, because the law-bounded material reality cannot be sacrificed to indeterminism implied by free-will, the two domains need to be separated. Gergen is very aware of the implications of either a materialist or idealist monism: according to the idealist

> *… the presumption that there is a material world is something we generate with our minds. Although idealist views remain alive in certain quarters, they are generally rejected. Few wish to accept the solipsism invited by this view, that is, the assumption*

---

[83] Deterministic in the sense of mechanistic. Bhaskar provides a lucid description of the classical material world.

that we each live in totally private worlds, and that even the belief that other persons exist is nothing more than a private fantasy[84] (Gergen, 1999, pp. 8-9).[85]

Materialism likewise has unacceptable consequences by reducing the mind to mere cause and effect or machine-like behaviour subjected to laws.

4.2.2   Knowledge

The focus on the subject has consequences for epistemology: how do we as subjective individuals get to know the reality or world out there? One way is to observe and describe nature or reality. This is the classical empiricist way. Mind was seen as the mirror of nature; we describe what we see as accurately as possible and this constitutes knowledge. Gergen (1999, p. 14) says *"Knowledge begins, it is said, with careful observation."* He then shows that observation cannot be the correct starting point because each specialist or scientist views a phenomenon from her own perspective, patterns and categories. For example, the botanist and the physicist will describe a piece of wood from their own respective frameworks. Consequently, observation cannot lead to an accurate mirroring of nature. In order to obtain similar results from observation, the framework from which observation was made need to be replicated. The framework is not only the immediate context but also research and related traditions. The categories used by specialists cannot be simply read off from nature. These categories are seated within traditions:

 … we must suppose that everything we have learned about our world and ourselves— that gravity holds us to the earth, people cannot fly like birds, cancer kills, or that punishment deters bad behaviour—could be otherwise. There is nothing about what

---

[84] My supervisor, Prof Antonites, pointed out that this remark of Gergen ought to be questioned. Gergen is referring to subjective idealism, conflating it with other variants and then critiquing it. This is a form of composite fallacy. Solipsism is most surely not characteristic of the more influential variant of idealism, namely, objective idealism. *"Theism, which maintains that matter was created by a supernatural consciousness, is taken to be the chief form of <u>idealism</u>; under the title 'objective idealism' this is sometimes distinguished from 'subjective idealism', the view that the material world exists only for the individual mind"*. Williamson (2005) provides a helpful illustration of objective idealism in the context of anti-realism about truths realists hold as true. One form of mind-dependent truth is stipulative truth, i.e. saying "My dog's name is Terri" makes it true in a personal and subjective sense. However, by extending stipulative truth a bit, one realizes that telling stories do not make them true. One then needs to move towards social consensus of truth, but again, the masses might be wrong (especially with regard to moral truths, but even scientific truths do not escape the beliefs of the masses: think about claims about the earth's flatness!). The next step is to make truth dependent on enduring social consensus, thus, consensus "in the long run." Truth then becomes embedded in social practices, conventions and long standing traditions. Truth is now dependent not on the individual mind; *"…it is an ideal mind, as prescribed by normative rules embodied in our thought and talk. Hegel's **objective idealism** prefigured this view"* (Williamson, 2005). To return to solipsism: it applies fine to subjective idealism but as we can see, not to objective idealism.

[85] We can assume that Gergen agrees, by the way he puts it, that idealist solipsism is to be avoided.

there is that demands these particular accounts; we could use our language to construct alternative worlds in which there is no gravity or cancer, or in which persons and birds are equivalent, and punishment adored (Gergen, 1999, p. 47).

One problem associated with knowledge gathered objectively is the value neutrality of the exercise. According to Gergen the problem of value neutrality is also imbedded in the modernist paradigm. In the modernist context science requires value neutrality as a corollary of objectivity. Knowledge cannot be infested with subjective and thus untrue perspectives. However, according to Gergen (1999), so-called scientific interpretations and valuations are not value-natural but interest-laden. This case does not only apply to social science, humanities, politics, etc. but also to natural science. Gergen (1999, p. 22) quite correctly quotes an example of how women's bodies are referred to in medical texts. All interpretation is value-laden and the balance of power requires vested interests to be protected in the expression of science and culture.

4.2.3 *Language and reality*

The distinctive link between the individual and reality can be disrupted by shifting to relational aspects of a community knowing and practicing science, but this leaves the medium for linking thought and reality, namely, language intact. The realisation that language might be the source of the modernist quandary, namely, laying claim to objective truth and knowledge, led to the semiotic and deconstructionist critique of language (Gergen, 1999, p. 29).

The question is how language manages to bridge the divide between world and subjective knowledge. The modernist view of language leads to what Gergen calls the picture theory of language[86] (or the correspondence theory of language), i.e. words describe the world as it is. It thus provides us with pictures of the world. However, there is a fundamental divide between reality and language or as he states it *"The terms by which we understand our world and our self are neither required nor demanded by 'what there is'"* (Gergen, 1999, p. 47). Does this imply a realist position and merely a division between language and reality? Photographs and verbal descriptions do represent, describe or picture what there is—it is open to many interpretations—in fact, there is no way to distinguish better or worse descriptions *"… in principle (though not in practice)"* (Gergen, 1999, p. 47). The divide between language and reality is motivated by postmodern developments about language.

---

[86] I do not think one should try to stretch the picture metaphor too far: image and picture has other connotations in the language of cognitive psychology. "Representational" and "correspondence" are better terms to use.

Gergen (1999, p. 24) refers to Saussure's (1959, pp. 67, 73) semiotics and two basic ideas, namely, that the relationship between signifier and signified[87] is arbitrary and that sign systems are closed, i.e. the rules determining relationships and meaning are indigenous to the system. The implication is that in language as a sign system meaning is assigned to words entirely arbitrarily. There is nothing in the world that dictates what a specific word should mean, accordingly, what a word means is arbitrary. Also, words find their meaning within the relationship between other words without the need to refer to the world. Not only is the meaning of words internally[88] determined, syntax and grammar also function as internal rules to make sense of what we are saying. If this is true then meaning has no link with the outside world according to Gergen (1999, p. 26).

Deconstruction drove the next nail into the coffin of the correspondence theory of language. Referring to Derrida, Gergen (1999, pp. 26-27) points out two aspects in deconstruction theory that undermines the correspondence theory. First, efforts to find meaning depend on *"a massive suppression of meaning"* and second, no rational argument is immune to critical scrutiny.

According to Derrida's (1998, 2005) theory, meaning of words depend on binaries, i.e. the meaning that one wants to bring into focus always depends on the second binary, namely, its difference. Meaning is a matter of presence and absence. For example, against the meaning of white is absence or the differentiation from non-white (or black).[89] However, the absences as the second pole of the binary are usually suppressed, but as Gergen say, without these, the current meaning cannot exist. The suppression of the meaning of the binary takes place to focus on the actual meaning of words and concepts. In *this* sense language involves meaning suppression.

The second aspect involves the vacuity of any rational foundation. Rational argument is regarded as the basis for making scientific and moral decisions but according to Derrida this confidence in rationality is unfounded. Given his method of difference and deferring, the meaning of any word is in principle ambiguous and not decidable. This fragility underlies rational argumentation—clarifying meaning involves moving within the encapsulated system of language where meaning is constantly shifting (cf. Gergen, 1999, pp. 28-29).

---

[87] Holdcroft (1998) notes that signifier refers to the phonetic expression of a word and signified to the concept of say "dog." Signified is thus not necessarily the real thing. However, language is a self-contained system and Holdcroft (1998) continues *"Hence, Saussure argues, signifieds cannot be identified, as we did as a first approximation, with concepts, for that would suggest that they have a content independent of the linguistic system to which they belong. Instead, they should be thought of as values which are wholly dependent on the system to which they belong."*

[88] This reminds me of Fodor and his gripe with holism in language.

[89] Gergen's (1999, p. 27) example.

Modernist assumptions are thus based on the privileged position of the individual to find truth through the medium of language that we can call epistemological atomism. We have seen how Gergen demonstrated that the basic modernist tenet cannot be upheld in the light of post-modernist criticism.

However, epistemological atomism or the primacy of the knowing individual influenced western traditions fundamentally (Gergen, 1999). Cultural imperialism was one of the effects due to truths regarded as universal. Western traditions were seen as superior to other traditions and that led to various socio-political and religious catastrophes. The noble cause of the enlightenment, namely, establishing democracy on all levels of society by giving power to the individual lead to a new hegemony: the constitution of a new class of experts. This hegemony of knowledge established a special domain of knowledge and to enter that domain one has to be initiated: "*As scientific communities have grown strong, so they have developed specialized vocabularies, methodologies, modes of analysis and practices of reason. Thus, we confront the emergence of a new 'knowledge class,' groups who claim superiority of voice over all others*" (Gergen, 1999, p. 18).

The emphasis on the individual leads further to the neglect of social relations. Importantly, the important role groups, society and communities play in knowledge production and morality is not acknowledged. Gergen (1999, p. 18) blames the emphasis on individual rights for the neglect of our obligation towards the social: communities need to be sustained for the collective good. Relations in a modernist society are merely instrumental: with the new individualism one is "*… invited into an instrumental posture toward others…*" (Gergen, 1999, p. 18). This is a relationship of power constituted by the distinction between self and other: what is not the self is the 'other.' The other is thus a means to provide the self with fulfilment. Simply put, the other can only mean something as long as the self benefits from the relationship. This *"instrumental posture"* is carried through to other spheres such as nature: basically it involves an orientation of exploitation rather than sustainability of which the last is rooted in fulfilling our obligations towards the community.

Gergen also explicates the role of language in terms of Wittgenstein's language game metaphor and life forms. What are the implications of Wittgenstein's metaphor for social constructionism? According to Gergen (1999, p. 48) *"Our modes of description, explanation and/or representations are derived from relationship."* This means that we establish meaning in language only within a relationship with somebody else, and deeper with culture and history/tradition. The solipsism of a self-contained meaning generating language system is broken since language is a game acted out by players. The individual is thus denied the privileged position of establishing or originating meaning.

Maintaining traditions, culture, institutions, and history requires, first of all, relationships and the language emerging from those relationships—maintaining a ritual requires relatively enduring relationships and the ability to maintain the ritual's intelligibility or meaning: *"As we describe, explain or otherwise represent, so do we fashion our future"* (Gergen, 1999, p. 48). Thus, meaning is co-created and this creation or construction of meaning maintains morality, values or as Wittgenstein put it, life forms. According to Gergen, the past does not determine the future—that that was maintained in the past can easily go to waste if there are no meaning-making relationships to sustain it; traditions and culture need to be continuously reinterpreted to make them relevant: *"The same is true of our intimate connections in daily life, in our families, and circles of friendship; we must continuously reconstruct their nature (for example, "who we are to each other") in order to keep them alive"* (Gergen, 1999, p. 49). He continues *"At the same time, constructionism offers a bold invitation to transform social life, to build new futures"* (p. 49) What Gergen calls *"generative discourses"* focus on not only making the past relevant but on generating new discourse that simultaneously criticises the existing forms of life and that opens up new possibilities. In this way constructionism focuses on the future.

Usually when we consider certain alternative issues it is always from within a particular tradition and we it is difficult to consider alternatives outside of this tradition as a possibility:

> *For constructionists such considerations lead to a celebration of reflexivity, that is, the attempt to place one's premises into question, to suspend the "obvious," to listen to alternative framings of reality, and to grapple with the comparative outcomes of multiple standpoints. For the constructionist this means an unrelenting concern with the blinding potential of the "taken-for-granted." If we are to build together toward a more viable future then we must be prepared to doubt everything we have accepted as real, true, right, necessary or essential. This kind of critical reflection is not necessarily a prelude to rejecting our major traditions. It is simply to recognize them as traditions— historically and culturally situated; it is to recognize the legitimacy of other traditions within their own terms. And it is to invite the kind of dialogue that might lead to common ground* (Gergen, 1999, p. 50).

4.3 Scientific knowledge

The social constructionist motivation for its view almost invariably takes place against the ills of positivism as the standard view of science. On the one hand, taking positivism as starting point is valid in a sense because social science and specifically empirical sociology and psychology went through a phase during the first half of the 20th century that largely reflected the orientation of empiricist science. Thus, it was quite valid at some stage to break free from the hegemony of empiricist/positivist science, to criticize certain assumptions and develop an orientation that can now be called post-modern and constructionist (Alasuutari, 2010; Michell, 2004, 2011b;

Morgan, 2007). However, to continue this line of defence for qualitative/post-modern/constructionist approaches is currently untenable (Cruickshank, 2012; Martin, 2003; Michell, 2003b; 2011c, p. 254 footnote 4; Vinden, 1999). It would be interesting to see whether someone like Gergen's (1982) earlier criticism of empirical science differs from his (1999) current views of science and qualitative approaches[90]. Such an investigation could give some insight into the extent that current prevailing views of science manage to influence constructionist views.

According to Gergen (1982, pp. 7-9) positivist-empirical science has been characterised by a few assumptions, namely, (a) that the major task of science is to construct general laws, (b) the laws should be consistent with empirical fact, (c) scientific knowledge is cumulative. Although Gergen acknowledges the changed assumptions of logical empiricism over time and that it was superseded by post-positivism, the basic tenets of what science should do and be remain the same—these tenets form the received view.

(a)   General laws should indicate the relationship between observed events enable the scientist to explain why those events occurred. The scientist ought to be able to predict future events with these laws in hand.

(b)   Laws are based on systematic observation of occurring events. Despite Popper's inversion of the logical positivist verification principle, falsification does not rule out that theory, at some stage, must be tested against the facts (Maree, 1990, pp. 201-203).

(c)   Gergen (1982) bases the cumulative view of scientific knowledge on what the hypothetico-deductive method implies. According to him it requires that hypotheses are formulated about states of affairs, subsequently the hypotheses are empirical tested and if the verification is successful, the probability of the truth or validity of the statements under examination are increased. By eliminating statements and theories in this way, those that are truthful may be retained and progress ensured.

(d)   Empirical science must be dispassionate or objective. According to Gergen (1999, p. 91) for the empiricist *"the aim of good empirical research is to reflect the world as it is."* The empiricist has access to direct experience of reality and should not have any bias, feelings, or political motives towards his/her science.

(e)   The empiricist must have *control over conditions* and uses the model of cause and effect (Gergen, 1999, p. 91). In social sciences the implication is that behaviour

---

[90] I suspect that postmodern theorists working in particular paradigms all quote each other on the evils of positivism and in this way the myths of empirical science get perpetuated and believed by so-called qualitative researchers.

can be deterministically divided into cause and effect. The initial conditions can be specified and the eventual behaviour predicted.

(f) The scientist uses quantification as a precise language (Gergen, 1999, p. 92). The empiricist knows that language is not precise and the aim of science is precision. The assumption is that numbers are neutral (thus complying to objectivity). The scientist can statistically analyse observations when they are convert to numbers. In this way cause-effect can be determined and, consequently, predictions can be made.

(g) For the empiricist the aim is to find the one true answer from among many opinions (Gergen, 1999, p. 92).

(h) Truth and practice must be separated (Gergen, 1999, p. 93). For the empiricist the aim is to provide ahistorical and widely applicable laws that can be applied in all circumstances

Gergen's (1982, pp. 44-57) view of what positivist science is can be seen from what he regards as the defence against constructionist criticism. There are three important principles guiding positivist science, namely, predictability of behaviour, universality of behaviour and reduction of behaviour. The predictability of behaviour refers to the quest of finding stable patterns of behaviour and laws of behaviour. However, if the empiricist grants that human behaviour is variable, then to study it scientifically its variability must be minimised. An excellent illustration of this is humans' ability to innovate when becoming the objects of scientific scrutiny: when a subject is aware of the scientist intentions, he/she may react accordingly. This is the so-called reactivity problem (Shadish, Cook, & Campbell, 2001; Whitley, 2002). Ironically, the reactivity problem as a threat to scientific validity in the social sciences merely confirms that human behaviour might be very predictable in certain contexts.

However, Gergen regards the fact that some behaviours might seem similar or universal as incidental. The universality of behaviour refers to similar behaviour across groups (multicultural), places and times. Any resemblance of actions across, for instance, cultures is ephemeral, because it might be coincidental, but, more importantly,

> … *with proper sensitivity one could as well generate evidence for the universality of sitting in the shade, gazing at the moon, and hopping on one foot. The mere location of occasional likenesses does not serve as an adequate basis for establishing universality* (Gergen, 1982, p. 50).[91]

---

[91] Gergen has learned his Popperian lessons well: Popper's (2002, p. 45) problem with verification was that justificatory evidence can be found if one looks hard enough. Thus, a single article in the paper of a son killing his father in rage can serve to justify the Freudian Oedipus complex.

Reduction of human behaviour is not possible. It refers to the argument that human behaviour can ultimately be reduced to physiological processes and the body is amenable to physical analysis as a physical system. Gergen's (1982) objection is that knowledge of the physical system cannot provide the *content* of behaviour but depends largely on input and processing which cannot be controlled or predicted. The system is so complex and surrounded by such a complex environment (its history, everyday experience and impinging factors) that control of all variables and responses is not possible.

4.3.1 Stability

Underlying the tenets of the received view is an assumption of the stability of the empirical world, i.e. that regular events or patterns of events occur.[92] The assumption of the scientist is that there is a stability to be found and discovered, even in human behaviour. Gergen (1982) maintains that one of the fundamental differences between natural and social science is the extent of stability. While the former enjoys relative stability, the latter far less so, and patterns of behaviour are not reliable, replicable or enduring. Hence, human behaviour is relatively free of stimulus-conditions as opposed to more simple life forms. Social and psychological phenomena are influenced by contextual and temporal factors—in fact any semblance to universal behaviour or invariable behaviour is coincidental and not really universal, atemporal or invariable because human psycho-social behaviour is essentially contextual, variable and temporal:

> … *most would probably agree*[93] *that the vast share of human activity is not genetically programmed, that human conceptual capacities enable people to generate many new and different understandings of the world, and that prevailing investments in such values as freedom, unpredictability, and uniqueness may function as sources for counternormative behaviour* (Gergen, 1982, p. 43).

Gergen's warning is similar and bears upon illusory entities as well—so-called evidence for the existence of a mental 2πr mechanism can be found easily (Gergen, 1982, pp. 42-43).

[92] *"… if events in the world of nature were in a state of irregular flux, one would be ill equipped to develop objectively grounded principles relating classes of events. In a major sense the aim of scientific laws is to convert "noise" to information, to reduce chaos by singling out classes of events that bear systematic relationships with one another"* (Gergen, 1982, p. 11).

[93] Maze (1983, p. 141) quotes Gauld and Shotter (1977, p. 80) with what seems a typical constructionist belief: *"We do not need a psychologist to tell us why a mother stops her child from running into a busy road or why the child tugs her mother to the toyshop window. Our understanding of these actions is, in a real though limited sense, complete."* Maze calls this attitude, which assumes certain, usually positive, characteristics of human nature, "selective moralism." However, this selectivity applies to uncritical assumptions about human nature, which Gergen expressed in this quotation.

Thus, the quest for laws or stable patterns of human behaviour is not based on sure footing and can never yield adequate knowledge.

Human behaviour is capable of creative and new behaviours and not easily moulded into patterns. In terms of freedom of behaviour versus patterned events the subject matter of social science differs fundamentally from that of the natural science. Secondly, because humans are capable of interpreting their reality symbolically, the infinite variation possible in this process works against the ability to predict behaviour: *"The scientist's capacity to predict is precipitously dependent on the conceptual proclivities of the population under study"* (Gergen, 1982, p. 17). In this instance, the population under study is creative, able to find novel solutions and behaviours and fundamentally unpredictable. Gergen (1982) finds three aspects within human nature that militate against patterning and predictability. The first is a person's quest for freedom—the more one tries to shackle human beings the stronger the move towards freedom becomes. Similarly, Gergen finds a strive for uniqueness and a need to differentiate oneself from others as fundamental in some cultures. In the last instance, he acknowledges that a society requires some form of predictability to function properly,[94] but where there is social pressure to conform and behave predictable, the individual will be the first to try and be unpredictable[95].

4.3.2   *Objectivity and values*

Why can the researcher not be separated from her object of study as in positivistic concepts of science? Gergen says that this typical view of science requires a gap between scientist and phenomenon[96] and points out that, for instance, the astronomer's theory does not change the path of the planets and position of the stars (Gergen, 1982, p. 22). However, as he correctly points out, there are at least two aspects involved in doing science that involve a reciprocal influence between observer and phenomenon. First of all, the theory-laden nature of perception, and secondly, the value-laden nature of human conduct influences the way we do science.

---

[94] Gergen negates pattern on the one hand, whilst acknowledging it as useful, on the other hand. This typical inconsistency is symptomatic of some constructionists' zeal to criticize their opponents. Another example: *"If others' actions were in a constant state of capricious change, one could scarcely survive; a society dominated by chaotic dislocation in patterns of conduct scarcely remain viable"* (Gergen, 1982, p. 20).

[95] Note that Gergen has no qualms here to defend his position from an essentially individualistic standpoint—i.e. the values of the individual as rational, self-sufficient and unique agent seems to inform us why patterning cannot be applied.

[96] *"As typically advanced, the scientist should ideally function as an impartial bystander whose conduct should not influence the events that he or she hopes to understand"* (Gergen, 1982, p. 21). I do not think this is accurate because the scientist looking for causes meddles and interferes by experimentation. This is probably one misunderstanding about current science that constructionists build their criticisms on.

Reality does not present itself to the observer in ready-made categories of understanding. This implies that despite the so-called position of non-influence of the scientist, her categories of understanding divides reality in slices dictated by the theory, history and culture/community of particular grouping of scientists. In this sense then there is no objectivity because reality is viewed through whatever lens the scientist holds up to her phenomena. Furthermore, Gergen (1982) shows that this lens has an important impact on the scientific community but also the social community within which her science is practised. Our concepts have implications for the way we act. Thus, the way the scientist segments reality and the explanations[97] she provides invariably colours her own research programme but also the behaviour of the consumer of scientific knowledge.

The second aspect is the value-laden nature of human conduct. The scientist is required to remain dispassionate,[98] i.e., not to allow emotions, interests and values to enter the practice of science. However, as Gergen (1982) again correctly argues, this is impossible: (a) the segmentation of reality often harbours interests, values and intentions not always conscious at the time but influenced by the socio-cultural climate—some distinction can lead to oppression of minorities, others to systematic blindness to relevant issues. Gergen uses the example of social theories of conflict that has been developed that were influenced by scientists' fear of nuclear warfare. (b) Terms developed and used in a research programme can subtly conceal bias, such as a term in a theory of aggression that spurns the aggressor (Gergen, 1982, p. 29). (c) Along with segmentation and terminology, explanation also can include bias, for instance, individualism perpetuated in social theories. Finally, (d) the process of how science is conducted can also harbour interests and bias. Gergen uses the interesting example of traditional psychology that entertains a Humean conception of causality and a positivist view of observation.[99] According to Gergen (1982, p. 31) a

---

[97] Gergen (1982) specifies explication of sequences and uncovering causal mechanism which I take to be explanation per se: *"In addition to specifying sequence, normal science typically entails an elaboration of the underlying mechanisms or processes. The scientist not only attempts to describe 'what leads to what,' but 'why' sequences occur as they do. To specify the causal source for a given phenomenon is also to furnish a logic for reaction. Such reactions, in turn, may subsequently change the character of the phenomenon itself"* (Gergen, 1982, p. 25). The search for underlying mechanisms is of course a hallmark of realist science and not positivist or empiricist science. This is a nice illustration of the confusion that reigns amongst constructionist: it is ideas such as these that get propagated uncritically and perpetuated indefinitely.

[98] The first characteristic of objectivity defined by Gergen was non-interference and the second one is remaining dispassionate. Thus, both overt actions and private interests cannot interfere with the practice of science.

[99] Now what does this mean? Humean causality means cause and effect—I am not sure what other forms of causality Gergen defines. Positivism aka logical positivism according to my understanding is built on the idea of Humean causality, namely, observing frequent proximity of two events, the so-called cause and effect. If Gergen hereby ascribes the metaphysical concept "cause" to empirical science he again conflates realism and empiricism.

91

Humean/positivist view of science aims at *"… locat(ing) reliable patterns of contingency among observable events."* [100] Consequently, psychology has to find links between stimuli, which is what the erstwhile behaviourism did. The implication is that if persons are stimulus-response organisms then one can control behaviour by controlling the stimuli conditions. Psychological research based on these assumptions encourage a view of persons as *"manipulable automaton(s)"* (Gergen, 1982, p. 32).

It is my view that constructionist criticism has a valuable place in the scientific process. It has both methodological and theoretical implications. Taking the theory of aggression as an example: the constructionist critical view is that the aggressor is invariably seen as the guilty party or the scoundrel. Thus, a bias is uncovered in the theory against the aggressor, for whatever reason; it might be that the aggressor is usually the originator of verbal abuse, violence and so on and hurting other people is regarded as bad. The constructionist would like to turn this around and open up perspectives of viewing the aggressor not as the scoundrel but as one that could have reason to act and feel the way he does and so on. The concern for the constructionist then is that a particular way of understanding the aggressor permeates the theory. On the level of theory constructionist criticism opens up new avenues of research and moves explanation beyond its usual borders.

Methodologically speaking, what would happen if the researcher acknowledged this bias? For example, the researcher admits that she was abused as a girl and because of this experience she is inclined to think of aggressive people in a pejorative manner. What should she do with this information? Does she incorporate the acknowledgement into the research and says *"because of my bad experience and subsequent therapy sessions, the theory that I have devised could be biased in terms of the way I view actors described in the theory"*? Or does she bracket this bias and try to present a fair and neutral theory with respect to aggression?[101]

4.3.3 Fallacy of misplaced concreteness

In his explication of the contextual, variable and atemporal nature of psycho-social phenomena, Gergen (1982) touches upon important issues for the realist

---

[100] I do not understand this phrase totally: does it mean finding reliable patterns or associations between contingent events or behaviour because as soon as a pattern has been found then the events cease to be contingent. Thus, *"reliable patterns of contingency"* is a contradiction in terms.

[101] I am not sure how the constructionist would respond—maybe later in the study a better answer can be given. It seems as if unconscious bias are not admissible when one presents a theory as objective, but conscious bias is admissible if it is wilfully worked in. The other possibility is that the constructionist will say that one should not incorporate this bias, but then the theory sounds very much positivist.

scientist which, in my opinion, rather than debunking empirical work, makes the scientist more aware of the importance of adequate scientific work.

Gergen argues against hypothesis testing in empirical social science by indicating that the falsification or substantiation cannot contribute to accumulation of knowledge since this is what he believes the hypothesis test contributes to.[102] The examples he provides motivate the unsuitably of the hypothesis test in the social sciences: (a) because human behaviour changes rapidly and slowly over time the hypothesis test will capture only a particular, and duly, non-representative, segment of behaviour; (b) Consequently, a crucial experiment can never be conducted to decide between alternative theories.[103] I think it is a misunderstanding to believe that the statistical hypothesis test leads to accumulation of scientific knowledge—researchers know that a number of factors influence the adequacy or validity of a hypothesis test and its abuse needs to be curtailed. However, more about this later.

Gergen (1982, pp. 34-41) showed that the choice of constructs to be examined can be totally arbitrary. Identification of independent, dependent and intervening/moderating variables and successful testing thereof does not necessarily lead to valid conclusions.

The first point is that when identifying dependent, independent and intervening variables, many more may be added by means of careful thought based on previous research and conceptual analysis. Although not explicitly stated, the ability to generate a number of possible variables impacting on the problem at hand either as independent and confounding variables should caution the researcher of committing, what I shall call, the entity fallacy. The mere fact that others and one self are able to think of putative constructs does not imply that such constructs, processes and relations exist—the ability to think of unicorns does not guarantee their substantiality as entities.[104] Gergen's (1999, p. 13) fallacy of misplaced concreteness

---

[102] *"For it is the 'hypothesis test' as it is inappropriately termed, that furnishes the putative building blocks in the process of accumulating knowledge"* (Gergen, 1982, p. 35).,

[103] Although it is not clear why Gergen wants to revive the debate about the "crucial experiment" (Popper, 2005, p. 59 footnote 1 and p. 277) notion within social science because on his own admission this has been abandoned in the philosophy of science (cf. 1982, p. 41 footnote 40). Granted, he polemicizes against a positivist incarnated behaviourist psychology, but perpetuating ideas applicable in one situation (behaviourist psychology) violates his own constructionist principle of local applicability. The upshot is that the warnings against the hypothesis test need to be taken heed of and it was greatly applicable in the positivist meanderings of behaviourist psychology, but in a realist mode of doing science the hypothesis test functions not as a crucial experiment indicator or as a final proof that knowledge has been gained.

[104] Gergen aptly illustrates this absurdity of such a position. He postulates an experiment where people are tested for a mental mechanism 2πr (the circumference of a circle). With a control-experimental group setup *"Clearly, there are only trivial lessons to be learned for testing the hypothesis that people possess a mental mechanism 2πr. The results would simply demonstrate that all those who possess the*

is related to what I have in mind as the entity fallacy. In his case, the fact that we use words such as thinking or intent lead to words such as thought and intention. It is a small jump to attribute concreteness to these words, i.e. "I had a thought" implies there is a concrete object in the head. This fallacy focuses on the way we use language and as such alerts us to carefully examine the way we speak about constructs. It also warns against a too glib adoption of folk psychology[105] into our psychological theories. The entity fallacy, on the other hand, warns against confusing thought and concreteness.

Gergen (1982, p. 38) reports the first problem as entity frequency. He assumes the constructs exist as entities in a particular community. Given that it does exist it is prone to the problem of entity frequency, namely, its relevance depends on the frequency of its use in a community. Entities change in their relevance over time. For example, self-image might be important at certain stages in a culture's history. Gergen's point is that these entities are not universally relevant and prone to change depending on the local context and not so much whether they actually exist or not. One would expect Gergen at this stage to indicate entities as cultural constructions but this grounding took place later in his work.

The relationship between dependent and independent, independent and intervening, and intervening and dependent variables not only change over time but are also subject to brief and rapid changes. The point is that one cannot assume the universal applicability of the relationship per se due to their local nature. For example, attitudes towards sexuality changed dramatically over time in certain western countries: a gender-attitude relationship with other variables would look different over fifty years in the United States.

4.3.4   Constructionist criticism

In this section I am referring to some of the issues Gergen regards as characteristics of traditional science mentioned on page 86 (paragraph 4.2 above). According to Gergen[106] constructionist criticism of the received view of science is

---

mechanism as posited by the investigator would respond as the investigator believed; those who did not would fail to confirm the hypothesis" (Gergen, 1982, p. 43). The confirmation of the hypothesis would largely depend on whether the chosen sample remembered the formula from their school days or had recent exposure to it. Whilst Gergen uses the example to illustrate the vacuous nature of the hypothesis test to contribute to knowledge, it serves as an excellent illustration of the entity-fallacy.

[105] Folk psychology can be understood in three ways: (a) as reference to cognitive capacities that explain and predict behaviour, (b) a theory of behaviour represented mentally, and (c) the theory ordinary folk have about mind and behaviour (Ravenscroft, 2010). A useful distinction made by Ravenscroft (2010) is that folk psychology as expressed in (b) can be called the mindreading or internal approach and in sense (c) the external or platitude understanding. I have used the term in sense (c), namely, the platitude understanding of folk psychology.

[106] *"My early training was in scientific psychology, that is, a psychology based on the promise that through the application of empirical methods, sound measures, and statistical analysis we would begin to approach the truth*

aimed at re-establishing the lost democracy that was the noble aim of enlightenment in the first place: *"Removing the mantle of scientific authority and fostering democratic participation has been a chief aim of constructionist inquiry"* (Gergen, 1999, p. 52). The exclusive domain of the high-priests of science needs to be broken open in order to allow the populace in; democratic participation in science is the aim: *"The point of this discussion is not to undermine scientific efforts, but to remove their authority and to place them into the orbit of everyday scrutiny"* (Gergen, 1999, p. 51).

Gergen agrees with the general belief of social constructionism, namely, that scientific knowledge is socially constructed which means that what is regarded as facts, are generally agreed upon within a particular community of scientists. However, according to Gergen (1999, p. 55), the outcome of social determination can be too extreme as the statement *"Scientific knowledge is nothing but social convention"* shows. He refers to Latour and Woolgar's (1979) exposition of how scientific fact gets established: scientists conscript others to defend their so-called factual findings and ward of negative criticism. Enough support in the social network of scientists establishes a fact as true. Scientific fact thus emerges from conscripting support in a network of interacting influences.[107]

The problem with this emergentist theory is that each time one confronts a factual claim, one is referred to other sources much like opening a series of Russian dolls: the fact cannot be isolated and identified but consists of this web of *"interlocking arrangement of assumptions, equipments, writings, and so on—in effect, an entire tradition or form of life"* (Gergen, 1999, p. 57). In the end the view of the scientist as the *"new high-priest"* is strengthened by means of keeping the uninitiated away from this privileged knowledge. What do the ignorant populace then do with a scientific fact such as smoking causes cancer? If Gergen's purpose is to devolve epistemic authority to the populace, what do they do when confronted with such a claim? Gergen (1999, p. 57) hovers between saying that this fact stays a mere construction and that one should

---

of mental functioning. Most of my graduate training was thus occupied by seminars and research practice devoted to 'establishing knowledge.' I learned my lessons well, how to produce from the messy confines of laboratory life the kinds of clear and compelling 'facts' acceptable to the professional journals. A few tricks of the trade: pre-test the experimental manipulations so to ensure that the desired effects are obtained; use multiple measures so to ensure that at least one will demonstrate the effects; if the first statistical test doesn't yield a reliable difference, try others that will; if there are subjects who dramatically contradict the desired effect, try to find a bias that will disqualify their data; if you run enough subjects even the smallest effect can reach significance; be sure to cite early research to express historical depth; cite recent research to demonstrate 'up-to-date' knowledge; do not cite Freud, Jung or any other 'pre-scientific' psychologist; cite the research of scientists who are supported by the findings as they are likely to be asked for evaluations by the journal. Nor was it simply that mastering the craft of research management allowed me to 'generate facts' in the scientific journals; success also meant research grants, reputation, and higher status jobs.

I no longer do this kind of work…" (Gergen, 1999, p. 58).

[107] *"…we find what we call 'scientific facts' to emerge from an array of interacting influences—scholarly organizations, journals, apparatus, the public and so on"* (Gergen, 1999, p. 56).

95

accept it as the truth—he actually says one should pay attention to a fact like this and adjust our lives accordingly because such a proposition has *"functional value"* in the light of the value of *"what we call 'life'"* (implying that life is also a cultural construction!).[108]

Objectivity (or rather the impression of objectivity), depends on rhetoric, namely, using distancing language, language that establishes authority and unemotional, i.e. distant or detached language. Objectivity as a way of talk is a functional necessity—it depends on the particular scientific community. Gergen says something interesting, namely, that persons would not be able to walk on the moon had the space agents not talked in a particular way because the language of science establishes trust and communicative ability: *"They are 'calling a spade a spade' in terms of the community's standards, and as a result humans can walk on the moon"* (Gergen, 1999, p. 76). He continues *"The rhetoric of the real may be essential to effective community functioning; problems result primarily when the internal realities are treated as universal or 'really real'"* (Gergen, 1999, p. 76).

Against the belief that empirical science must be dispassionate (paragraph (d) on p. 87), the constructionist responds that the scientist does research for a reason: *"It is disingenuous to cloak these investments in the language of neutrality"* (Gergen, 1999, p. 91). However, I believe that science does have social consequences—Gergen (1999) creates the impression that the so-called dispassionate nature of science negates the actual interests scientists have but I think he is confusing objectivity with objectivism. One should indicate why objectivity is a necessary prerequisite for doing science, at least from a realist perspective. In fact, the constructionist demand for critical enquiry establishes objective distance. The way Gergen (1999, p. 91) poses the issue, namely, social constructionism grounds passionate relations between people and the scientist can thus not be distancing and dispassionate, confuses to types of relations.[109]

Against the issue of the control of conditions (see paragraph (e) on p. 87), the constructionist holds that cause and effect is a social construction. It is read into observations. The division of world into events, precise segments (as Gergen puts it) or discrete actions *"… is again an a priori commitment, a fore-structure of understanding as opposed to a derivative as it is"* (Gergen, 1999, p. 91). This statement is very contentious: in the first place what does he view as *"a derivative of reality as it is"*—how does the constructionist know reality as it is? The constructionist purports to be anti-realist

---

[108] Note the same tactic in Gergen's writing as noted earlier: deconstructing something but then retracting at some point in the argument. We cannot really say that smoking does not cause cancer—not heeding might just kill you!

[109] This is one of the aspects I will clarify: how is it possible to do science within a posture of distancing whilst retaining one's humane interests. Gergen's argument involves a false binary: the two types of relations involved in scientific enquiry and in empathetic relations with people are very different.

and reality cannot be known without construction or interpretation: the human mind always enters into any attempt to know "reality." The second aspect that Gergen emphasises is the implication of the cause-effect model, namely, that human agency is thereby negated. *"People are by implication reduced to robots …"* (Gergen, 1999, p. 92). He follows with the following: *"It is not that constructionism holds agency to be true, but there are very good reasons for nurturing this vulnerable tradition"* (Gergen, 1999, p. 92).

Two further aspects are indicated, namely, that we would not like to live with scientists that believe the best way to get results is control and manipulation, and results gained from controlled studies only serve those in power. I am not denying that there is research that keeps institutions, companies and even governments in power but stating that science as a social enterprise is authoritarian is going too far, although the claim might apply to institutionalised forms of science. As Gergen acknowledges, any research can be interpreted in more than one way! I would like to know how constructionist research refrains from supporting power structures—is it in some way exempt from being recruited for socio-political, unethical or economic purposes? Ironically, the fact that research can be framed and contextualised by whomever is applying research to inappropriate situations, emphasises the requirement for objectivity! Taking this argument from the other side: if a researcher doing research for a tobacco company with well-controlled research found that smoking does not cause cancer, fully and shamelessly exposed his/her bias, namely, that the aim was to support the tobacco company's sale of tobacco, then the researcher actually complied to the constructionist requirement of not remaining dispassionate.

The remainder of the traditional characteristics of science (paragraphs (f) to on (h) p. 88 above) can be briefly remarked upon:

(a) Against the quantitative imperative the constructionist holds that number is merely a different way of representing. Numbers reduce and eliminate the personal and subjective. Moreover, statistics is an expert language only for the initiated—it functions as a silencing device! This issue will be dealt with in the last chapter (see paragraph 2.2.3).

(b) Against the search of the scientist for the one truthful answer the constructionist says that there are multiple interpretations possible—how can we choose only one true voice—the others are thereby silenced! The realist denies that there is one absolute truthful answer because someone else might make a different claim. This opens up the way for criticism and debate.

(c) Against the tenet that truth and practice must be separated the constructionist says that theories cannot be proven true or false by data. The scientist's view of what data is comes from the theoretical standpoint in any case and this

theoretical standpoint is formed by the community the scientist stands in—Gergen thus typifies the search for universal laws/theories as *"cultural imperialism"* (1999, p. 93). This issue relates to how we view truth and our ability to state truth with certainty (Bernstein, 1983). As will become clear, this point is probably based on a false image of science. Fallibility is essentially part of realism as is a critical view of universality.

Gergen (1999) said that constructionists do not deny the usefulness of empiricist studies, only that they need to tone down the claim of truth and then *"… there would be far less resistance to such work"* (pp. 93-94). This statement is surprising in the light of the fact that literature is replete with references from constructionist and postmodernists whom deny the empirical scientist right of existence. The issue of fallibility, truth and universality of laws will be touched upon later in this study as I have mentioned above. Realists are constantly battling the positivist straw man fabricated by constructionists validating the latter's views. The second way empirical research can be modified to become more acceptable is to remove its universal truth claim—truth is local and empirical research must be locally relevant and applicable.

Gergen also claims that empirical data can be used as illustrations much as the journalist uses photographs: to *"inject life into an idea in a way that helps us appreciate its significance and plausibility"* (Gergen, 1999, p. 94). I would like to see the NASA scientist trying to market an idea for failsafe tiles for the Challenger in this way—to inject life! Imagine the empirical scientist working in this way and what disastrous consequences a failed rhetoric would have. Empirical research is ok if its predictions can be applied to social, moral and political issues. Gergen claims that much empirical research is trivial and restricted to pushing buttons and completing questionnaires.

4.4 Constructing the self

The major focus of Gergen's (1982) criticism of positivist-empiricist sciences is based on the changing nature of human beings, the interpretive nature of human reality and the linguistic nature of humanity.

4.4.1 Inconstancy of human nature

In countering the behavioural scientists' search for laws, durability and tendencies in human behaviour, Gergen (1982) motivates its impossibility at length by stressing the inconstancy of human behaviour. It is forever changing, free, no two acts are ever the same and human beings have the unlimited capacity to choose, create and change at will. How on earth can one through the aeons of human history find semblances of similar behaviour that can point to certain repetitive streaks in humans? According to Gergen the putative perceived similarities are merely that, namely, hastily drawn conclusions based on coincidental observation. To take an extreme example, if one observes cooperative behaviour between ants and at some stage observe similar behaviour in groups of humans, does this warrant the inference

of a general principle governing groups of organism? Probably not, and the social researcher should indeed heed Gergen's (1982, p. 50) warning that coincidental observed similarities between groups, theories and cultures (like shade-sitting behaviour[110]) do not constitute laws or tendencies. Granted, Gergen (1982) restricts his examples carefully to (a) the search for universal patterns of behaviour based on so-called similarities between theories and cultures; (b) the construction of models of behaviour (which implies that the ability to construct such a model does not mean the patterns or tendencies are real—recall the ant example above); (c) correlating a large number of variables across groups, populations and cultures where the existence of correlations often are interpreted as indicating stable patterns of cross-group behaviour and characteristics. However, given the empirical scientist's investigation of universal behaviour, the abstract notion of universal behaviour should correspond to observable instances of such behaviour. There should be correspondence rules connecting the abstract concept and the observable—

> *without such correspondence rules, the concept of universals is without empirical content. Yet, if human activity is undergoing continuous change, if cultures develop novel patterns of action over time, then systems of correspondence rules are constantly threated (sic) by obsolescence* (Gergen, 1982, p. 55).

However, I think that he overstates the case of human inconstancy, which was less pejoratively termed as changing nature. If no "theme" existed in human behaviour, speech and actions, then it would be impossible to negotiate and maintain relationships.[111] If the wife cannot at least guess the mood of her husband (or the other way around) given certain typical actions, then she walks into a conversation blindly with the knowledge that no background information informing her interpretive stance towards her husband could assist her in communicating. Each conversation will start anew, each meeting between so-called friends and groups would be fresh—there would be no history except unpredictability, nothing to at least build upon. Nations would have to renegotiate each contract anew and in this world of chaos each day would be new, left with nothing durable or any promise of something better in future.

---

[110] See Gergen (1982, p. 50) and p. 24 above.

[111] Gergen knows this of course and says with reference to natural science, "*Once it is agreed that general laws are obviated by chaotic change, the empirical test of theoretical propositions and their derivations become superfluous as well. If flux prevails, once could scarcely mount an empirical test of any kind.*" He later acknowledges that "*It would be extravagant, of course, to assert that either the natural or the social sciences are faced with a world of inchoate flux. Human nature would be terminated in short order should events in nature be fully capricious. Yet, it is equally misleading to assume full stability*" (Gergen, 1982, p. 11). Aimed at a natural and social sciences that assume "full" stability can be reached his polemic stance make sense but it seems out of place in a post-Popperian era where scientists assume *some* stability can be predicted. Why do the constructionists keep on flagellating empirical social scientists?

My contention is that total inconstancy erodes the very heart of constructionism, namely, the ability to construct relationships. Gergen (1982, pp. 11-12) calls for a radical division between the phenomena of natural and social science, even though he acknowledges that social sciences cannot be devoid of any stability. The division is based on the more or less stability of their phenomena in the natural and social sciences.[112] According to Gergen (1982, p. 13) the continued failure of the human and social sciences to provide any form of law or invariable principle for human behaviour ought to prompt us to re-examine the nature of phenomena under study. Social and psychological phenomena are qualitatively different than natural science phenomena and the fundamental difference lies in their suitability to be described with laws or principles at certain levels of abstraction: social and psychological phenomena cannot be described thusly; they are fundamentally unstable and variant.

4.4.2   *Interpretative nature of human reality*

Human reality as described and patterned through the eyes of human beings is equivocal. According to Gergen (1982) there are only multiple interpretations of behavioural acts. These interpretations depend on context or history. Context is determined by the stream of historical events within which a particular target of interpretation is embedded in. However, its embeddedness is also circumscribed by the sociocultural context. Although Gergen stipulates the contextual factors quite well, he is careful not to say that context *limits* interpretation but instead that it opens up limitless possibilities.[113] More specifically, an interpretation can constantly be revised in the light of past and present events.

Interpretation also varies between cultures. Indeed, culture, history and context determine how we react and feel: *"… the assumption that we privately think, feel, desire, intend, and the like is not demanded by 'what there is' but is essentially optional"* (Gergen, 1999, p. 117). This means that we are socially, culturally or systemically constructed or how ever one would like to put it. He calls it *"the ideology of the self-contained individual"* (Gergen, 1999, p. 118). This leads to a gulf between individuals—I cannot know the real you. From the individualistic perspective relationships are artificial whilst the individual still stays the primary entity. *"When the self is the essential atom of*

---

[112] *"There is ample reason to believe that the phenomena of the focal concern of the latter are far less stable (enduring, reliable, or replicable) than those of interest in the former. If this contention is sustained, it may be argued further that the traditional assumptions of scientific inquiry may provide an inadequate basis for inquiry in the social behavioral sciences"* (Gergen, 1982, p. 12).

[113] A good example that what Gergen advocates applies to his interpretation! Gergen cites western culture and Freudian theory which provides intelligibility rules for interpreting certain actions in a certain way but does not infer that these contextual boundaries limit the possibilities of plausible interpretation but says exactly the opposite: *"The limits to the range of possible intelligibility rules would appear to be those bounding the human imagination"* (Gergen, 1982, p. 63).

100

society, we find invitations to isolation, distrust, narcissism, and competition …" (Gergen, 1999, p. 122).

How we think about ourselves is culturally and socially determined and language or narratives play a fundamental role in forming these beliefs about ourselves. Gergen (1999, pp. 66-68) shows that metaphor is used to construct images of the self. For example, metaphoric speech is used to speak about the mind, thought and emotions. In the case of the mind and subjective experience a metaphor of inner/outer prevails which reminds one of a container metaphor of the mind. Gergen (1999, p. 67) refers to examples such as "what's on my mind" and "in my thoughts". What is inside can be distinguished from what is outside.

The self and what the self believes about the real (the world) and the good (values) are created socially (cf. Gergen, 1999, p. 81). Ontology and ethics are not so much dependent on what there is but on what is constructed and only later become "*solidified*" in order to seem like something objective and durable. A self is constructed within a relationship with others: as Gergen (1999, p. 82) says, who a person is and the nature of her actions are established in interaction with others. For example, *parents* provide a baby with a gender and the actions towards the baby establishes what the child eventually believes about herself. Furthermore, a person's talk about herself establishes her belief of who she is in terms of a single agent.

Relationships can only be established with shared meanings that in turn are established by sharing a language. The shared meanings refer to a shared reality. Shared reality establishes shared ethics or as Gergen puts it, patterns of interaction provide a certain structure to a relationship in terms of actions and communication. Breaking the patterns of actions and communications is disruptive and therein lies good or bad (Gergen, 1999, p. 81).

The construction of the self takes place in relationships contra the modernist view of a self-contained, rational individual (Lock & Strong, 2010, pp. 300-303). One of the problematic views of the concept of individual is the division between inner and outer. The construction of the senses as the receptors of outside impulses is problematic because the person will stay self-encapsulated. Gergen points out that the way we perceive are socially constructed within a locally bound community. Wine tasting is an example. However, this shifts the problem because constructing what counts as good wine, tastes, smells, and paintings does not answer the question how the person registers these sensations (cf. Gergen, 1999, pp. 102-104).

The point is emphasised with Gergen's (1999, pp. 104-105) discussion of pain. According to him there cannot be a universal phenomenon beyond construction because pain throughout history has been viewed differently – from Christian views that pain purges the sinner to masochistic invitation of pain by the boxer. However,

101

despite the various social constructions of pain, there remains a phenomenon that elicits a certain response in human beings and, for instance, in cultures where pain must be stoically *endured*, this very expression gives the nature of pain away: "endured" implies an initial avoidant reaction that must be revised. Gergen should also explain the fear and anxiety elicited when a child is repeatedly and severely beaten—of course, the child might decide to endure and survive no matter what and in this way grow stronger and callous but it does not negate the hurtful nature of pain.

Emotions are unduly substantialised in western psychology. Gergen (1999, pp. 107-111) tries to illustrate the futility of this exercise by providing a number of cultural examples where emotions are given labels that denotes feelings for which we do not have words. Consequently, there is cultural variation in what is experienced and how it is named. What the westernised person regards as primary emotions is not necessarily reflected in other cultures. Even history shows that names for emotions do not even apply today—does this mean that that emotion ceased to exist (an example is "curiosity")? Does this mean that experiences, feelings and emotions come into being and that they differ when the context changes? Or does it merely mean that language describing those variations of emotions capable by human beings differs? It might well be the case that a strange culture has words for a phenomenon or emotion experienced by a community, but that does not mean that it cannot be experienced or understood by an outsider.

I come back to the point of different emotions existing for different groups of people. The way the issue is posed presumes the reality of emotions experienced in the sense that an individual or group of people experience. Does this imply substantiality of the emotion (namely, that it is a thing)? I think from all the human states raging from consciousness to emotions one could agree that emotions are the least likely to be understood as a substance. But is it real?

One useful answer that Gergen gave that opens up different avenues for research is that in opposition to emotional-realism, emotions should be viewed as a way of acting:

> … *so it is with the entire range of emotional performances; they are ways of being, historically provided ways of life. We need not measure them, wait for them to move us, or be concerned that we feel more that is "natural". Rather, like forms of dress or moves in a game or a dance, they are vocabularies of action, and life will be filled or emptied according to how we press then into action* (Gergen, 1999, pp. 111-112).

4.4.3 Establishing the relational nature of self

A fully relation view of being is necessary in order to establish the social constructionist view of persons. Thus, al vestiges of the individual as retaining control

102

or the remaining the originator of acts: an expression such as "I think" should constitute relational being and not individual being (cf. Gergen, 1999, p. 131).

Gergen (1999, pp. 131-132) motivates the primacy of relation to the individual self from the performative nature of language—when one says something like "I love you," it is not the expression of a private and subjective thought but the expression of an act that influences a relationship. However, the performative quality of language is not sufficient to establish the primacy of relational being since one merely acknowledges that spoken language is somehow embedded in relationships. Thus, examples of verbalised thought that presumes a dyadic relationship falls short of illustrating the relocation of being from single individuals to things that can only exist in multiplicity.

The next step for Gergen is to acknowledge the embeddedness of language and actions within a cultural history. As Gergen (1999) says, acts and words make sense by carrying a tradition of meaning with it: *"… when I perform I am carrying a history of relationships, manifesting them, expressing them. They inhabit my every motion"* (p. 133). Thus, relationships, i.e. those that formed the meaning of words and acts, inform current words and acts (performances). In a converse manner performances are intended for an audience, thus, an utterance such as "I think" has a recipient in mind. The question is whether the formative and informative nature of performances is sufficient to establish them as relational. According to Gergen (1999) they are:

> *We now find that one's performances are essentially constituents of relationship; they are inhabited not only by a history of relationships but as well by the relationships into which they are directed. By making these two theoretical moves, treating psychological discourse as performative and embedding performances within relationships, we are now positioned to see the entire vocabulary of the mind as constituted by and within relationship* (p. 133).

According to Gergen the dissolution of the individual originating mind is now final: *"… there is no independent territory called "mind" that demands attention. There is action, and action is constituted within and gains its intelligibility through relationship"* (Gergen, 1999, p. 133).

I am not too convinced at this stage that the dissolution of the mind is final precisely because of the sort of moves Gergen made: saying that all speech is aimed at other persons—and I am deliberately trying to make it sound banal—and that this constitutes its relational nature is not adequate.

Gergen claims: speech is aimed at other persons, thus relations or the social are constituted.

Other examples might be useful to point out the problem with the speech-social constitution:

The heart is aimed at keeping a person alive—does it or its goal constitute life?

A fork is aimed at assisting feeding; does this constitute eating?

Walking is aimed at getting from point a to b; does this constitute transport?

His jump from subjective to social actions does not convince: "*Thus, we may be doing something privately—which we might want to call reasoning, pondering, or feeling—but from the present standpoint these are essentially public actions carried out in private*" (Gergen, 1999, p. 134).[114] The examples he uses to emphasise the formative function, for example, memory is seen as a relational phenomenon. It is "*not an individual act but a collective one*" (Gergen, 1999, p. 134). A simple example is a child trying to recount a movie and getting some facts right and others wrong. Luckily, her mother is present to correct "facts."

As will be seen later (paragraph 5.4.6), philosophies of the idealist variety advocate the fallacy of constitutive relations (Hibberd, 2005, p. 115). Relations in realist terms are real, not substantive and hold externally between distinctive things.

4.5   Summary and conclusion

Gergen reacted consistently against the empiricist and positivist image of science which he regards as the received view. Social constructionism emphasises the constitutive nature of social communities in forming the identities of individuals. Individuality and subjectivity is denied to a large extent locating the individual with society and language. Gergen emphasizes the discursive nature of reality and calls for an alternative way of doing psychological science in contrast to the scientistic version. The social nature of the psychological requires an alternative mode of investigating on par with how that particular reality is constructed, namely, through language and discursively. Epistemic access to psychological reality is gained though meaning and discourse. Gergen denies subjective idealism. However, everything that there is can be, through language, be described otherwise.

Gergen also distinguishes between a natural and psychosocial world where different rules apply, namely determinate causality vs. freedom. He holds the usual objections against the received view of science, namely, predictability, and objectivity, quest for laws. These issues cannot be applied to psychosocial phenomena because human nature is indeterminate and based on the generation of meaning. One can appreciate his insights on the social development of science, the criticism of the

---

[114] Harré's account, discussed in paragraph 10.3.4.2 above, is more convincing by not negating the distinction between private and social.

primacy of the individual or knowledge atomism and even unseating the hegemonic authority of the scientist.

Again, I would like to point out a few principles from the discussion about Gergen. These principles or observations will be discussed in the last chapter.

(a)   Gergen points out the problem of the representationalist view of language that supposedly is believed to mirror reality.

(b)   Language is an internal referential system: words get meaning in their relationship to other words.

(c)   The individual is fundamentally free and unpredictable.

(d)   Gergen resonates Harré's deconstructionist view of received and traditional concepts as reflected in language. As an example, the language of objectivity merely creates an impression of objectivity and it is not real.

(e)   The value- and theory-ladeness of human activity do not spare science: there is nothing like impartiality, i.e. objectivity in science.

(f)   The nature of natural and the social domains precludes the ability to adapt natural science epistemology and methods to social science. The one is stable, the other in principle unpredictable and free.

(g)   The human and social domains are inherently meaningful, not amenable to measurement and prediction.

(h)   Cause and effect are constructions.

(i)   Reality is local and not universal.

(j)   The primacy of the atomistic individual acting on her own is eroded by Gergen. The self only consists as a relation with others.

CHAPTER 5 REALISM

5.1 Introduction

To clarify how realism differs from the received view of science, namely its empiricist variants, a brief overview of Scientific Realism is provided (for a succint and current overview of realism and naturalism in the philosophy of science see Morganti, 2016). It is the most prominent version of realism in the natural sciences with some applications in social and economic sciences. Chakravartty's (2007) Semirealism is discussed as a position responding on issues Structural and Entity Realism with accounting for anti-realist arguments. Semirealism accounts for both the reality of relata and relations, and holds that first order structures are real. Explanatory mechanisms reside in the properties of relata, thus relata cause other things to happen. The ontology of Semirealism firmly maintains the mind independence of things that exist and also acknowledges the realness of unobservables provided they comply with two criteria, namely, the ability to detect them and to manipulate them to do other things (Hacking, 1983). Causality is thus a fundamental principle underlying the reality of unobservable things and their structures. Semirealism accounts for the stability of core elements in a theory when theories change.

However, Scientific Realism is not usually applied to social and other sciences. Mäki is one Scientific Realist that accepts the tenets of realism and applies it to economic theory. He acknowledges the difference between the realities being investigated in social science, economic theory and natural science. In order to provide a minimal application for realism in social science he proposes relaxing some of the principles of realism such as mind-independence and unobservables. However, he also proposes a particular view of modelling phenomena and systems that might be profitable for explanation outside of the natural sciences. Importantly, his view of modelling is based on the assumption of causality underlying the socio-economic sphere.

A lesser known variation of realism originating from John Anderson working in Australia in the 50s and 60s is discussed as it provides epistemological and ontological principles pertinent to the natural-psychosocial division of reality as well as allowing an ontological grounding of knowledge and science avoiding some of the pitfalls of positivism and constructionism. Anderson's Situational Realism avoids empiricist reduction of facts to atomistic simple units, regards what happens in reality as complex, causality is not something singular and linear, avoids idealism at all costs, regards reality ontologically as one, and the roots of all knowledge, science and argumentation in the ontological claim that x is y. The implication of Situational Realism's avoidance of idealism is rather radical: the Kantian categories are ontological and what we know, perceive or understand is reality per se and not mediated by representations. Thus, understanding of how things work is based on

the principle of non-constitutive relations. Subject and object remains distinct and independent along with the relation but never can the one or the other along with a relation constitute either subject or object. The implication for constructionism is clear: the mind cannot in any way contribute to constituting reality.

The first of the two approaches to be reviewed is Scientific Realism (SR) along with Situational Realism (SiR). SR is the *force de majeure* in philosophy of science positioning itself against all kinds of anti-realisms (Mäki, 2011b, p. 1). Critical Realism is seldom, if ever, mentioned in their discussions and debates. [115] Meanwhile, CR made great inroads into social science and psychology, to such an extent, that it is regarded within social science circles as a major role player next to various postmodernist contenders (Bobulescu, 2011; Danermark, 2002, p. 5; Gul, 2011, p. 12213; Herborth, 2012, pp. 238, 242; O'Donnell, Kramar, & Dyball, 2013; Pilgrim, 2014; Seo, 2009, p. 2)

5.2 Scientific realism

5.2.1   Overview

Chakravartty's (2007, p. 4) definition of scientific realism can suffice for now: "*Scientific realism, to a rough, first approximation, is the view that scientific theories correctly describe the nature of a mind-independent world.*" Stated more generally, realism refers to one's belief that something is real, independent of one's mind (Chakravartty, 2007, p. 8). Scientific Realism is the view that progress and success in science can only be explained by a miracle if the stuff science works with is not real (Putnam, 1975, p. 73). The no-miracle argument as explanation for the success of science is countered by three crucial arguments and Chakravartty (2007) pointed out that this debate[116] generated much of current SR literature. The arguments are (a) the inference to the best explanation or the use of abductive inference, (b) the underdetermination of theory by data and (c) pessimistic induction (PI) (Chakravartty, 2007, p. 5; Ladyman, 2014).

Pessimistic induction or pessimistic meta-induction entails the view that theories in the past were shown to be false when replaced by newer theories. The fact that past theories are false implies that current theories will also be regarded as false in future[117] (Chakravartty, 2007, p. 7; Frigg & Votsis, 2011, p. 241). The issue then

---

[115] One gets a sense that Scientific Realists are not overwhelmed by Bhaskarian theory. In a major work *"Philosophy of economics"* Bhaskar gets a cursory acknowledgement from Mäki (2012, p. xvi) in the preface: "*'Critical realism' inspired by Roy Bhaskar's work has won some souls just as in some other social sciences.*"

[116] See Ladyman (2014) for one account of SR's development to counter anti-realist arguments.

[117] "*By induction based on these past cases, it is likely that present-day theories are also false and will be recognized as such in the future*" (Chakravartty, 2007, p. 7).

for the theorist is to determine whether there are stable elements surviving theories in the process of discarding old ones for newer theories.

There are many variants of realism,[118] especially in the type this thesis focuses on, which one can call Scientific Realism. Realism per se holds that there is a mind-independent reality, whilst Scientific Realism holds that our scientific theories describe the actual state of affairs. Both Critical Realism and Situational Realism are variants of Scientific Realism.

To reiterate, Bhaskar's Critical Realism was initially called Transcendental Realism, then Critical Naturalism and eventually Critical Realism reflecting the development of his thought in his theory of natural science and of social science (Bhaskar, 1975, 1998). CR rejects the Humean view of causality as the constant conjunction of events posing real mechanisms and powers underlying the regularities we perceive and experience. The real world consists of three levels, namely, the empirical, the actual and the real. The empiricist and the positivist, both which subscribe to Humean causality, restrict their views of reality to the empirical level, where constant conjunctions are perceived. The second level of the actual is where regularities are experienced and observed whilst the level of the real consists of the mechanisms responsible for the two levels above it. This is the level that the scientist needs to find. Scientific work consists thus of finding mechanisms explaining events, and Bhaskar (1975) takes experimental work as paradigmatic of natural scientific work. His stratified view of reality is supported by his view of the two domains humans and scientists work in, namely, the intransitive or objective (mind-independent) reality, and the transitive or world of created knowledge reality. He thus acknowledges the social dimension of scientific work where knowledge is created, tested, criticised and changed. CR emphasises the primacy of ontology (the intransitive domain) and points out that theories or positions constructing reality based on what can be known commit the epistemic fallacy.

Chakravartty (2007) notes that both Structural Realism (StR) and Entity Realism (EnR) have certain limitations for the scientist and he proposes his own variation of Scientific Realism, namely, Semirealism (SeR). He characterises both approaches as selective scepticism (Chakravartty, 2007, p. 30).

5.2.2   Entity Realism

EnR postulates that the reality of entities described in theories, thus, mainly the reality of unobservable entities, especially when it possible to manipulate them and let them interfere with other things (Chakravartty, 2007, p. 30).[119] However, EnR's

---

[118] Dunne and Schmidt (2014, pp. 103-108).

[119] A causal criterion is used to determine the reality of entities (Bhaskar, 1998, p. 13; Chakravartty, 2007, p. 30).

selective scepticism entails not believing everything that is postulated about entities. Consequently, the reality of theories is under suspicion (Chakravartty, 2007, p. 30; Frigg & Votsis, 2011, p. 259). Given the two criteria of manipulation and interference, a belief in the reality of entities is warranted but not necessarily in the reality of *theories* in which they occur. The two causal criteria might ensure the endurance of some entities through different versions of theories. However, entities do not operate in isolation but requires the information encapsulated in theories to make them intelligible [120] (Chakravartty, 2007, p. 31). More specifically, the properties and relations attached to the entities might be differently understood over time, hence, working for PI[121].

5.2.3   From Structural Realism to Semirealism

In order to counter objections that theory change produces for realism, StR[122] theories say something about the nature or structure[123] of (un)observable reality, but not about the unobservable individuals/entities within those structures (Ladyman, 1998, pp. 409-410). The relations are foregrounded at the expense of the relata, and the structure can be mathematically described (French & Ladyman, 2003). What is transferred between successive and different theories, is the structure and not necessarily the individuals. StR thus involves scepticism about the nature of the relata or entities but provides support for the no-miracle argument in terms of enduring structures (Chakravartty, 2007, p. 33).

Chakravartty (2007) provides a simple model of structure as point of departure: a picture on the wall consists of a frame, wire, glass and so on related in different ways, namely with glue, spatially and so on. The entities or relata are the things such

---

[120] *"Entities are capable of these relations because of the properties they have, and properties and relations are precisely what theories describe, so by asking the realist to believe only in the existence of certain entities but not further aspects of theories, ER asks too much"* (Chakravartty, 2007, p. 31).

[121] *"The problem here is that ER is too crude. It endorses existential statements, but what the realist requires is something more refined: a knowledge of the specific properties and relations on which existential claims are based, and that are likely to survive over time"* (Chakravartty, 2007, p. 32).

[122] *"Structural realism (SR) is the view that insofar as (mature, non-ad hoc, etc.) scientific theories offer approximately true descriptions of a mind-independent reality, they do not tell us about its nature, or more specifically, the nature of its unobservable parts"* (Chakravartty, 2007, p. 33).

[123] A clear understanding of what structure means is crucial for grasping structural realism. Chakravartty (2007, p. 33) indicates that structure in it simplest sense means things that stand in a relation to each other. Thus, things can be concrete and tangible but the relation they stand to each other can be abstract or not concrete. For instance, the man stands in front of the portrait, where "in front" indicates the relation. Does the fact that this relation is abstract, i.e. indicating position in space-time, make it less real that either the man or the portrait. Not at all. The portrait itself illustrates structure even better—a portrait is constituted of parts or things in relation to each other, a frame, photo, glass, and so on (Chakravartty, 2007, p. 34). I will come back to portrait illustration again in another context but for the moment the parts in a particular temporal-spatial arrangement constitutes the portrait. The same analysis can be done for the frame and so on.

as glass, frame and wire. For StR the relations are important and the relata almost functions as placeholders.

A distinction must be made between epistemic and ontic or ontological StR (Ainsworth, 2010): (a) Epistemic StR is the view that we can have knowledge of structures but not of relata[124] and (b) ontic[125] StR denies the existence of relata altogether[126] (Chakravartty, 2007, p. 32; Frigg & Votsis, 2011, p. 260; Ladyman, 1998). Although set-theoretic assumptions dominate discussions in SR, the structure character of reality does not imply that reality is essentially mathematical[127] (Ainsworth, 2010, p. 50; French & Ladyman, 2003).

An understanding of what SR means by structure is required. In its simplest form, a structure consists of relata and relations. In addition, a distinction between abstract and concrete structures can be made. In principle, an abstract[128] structure can have many concrete instantiations. Chakravartty (2007, p. 40) says *"A concrete structure consists in a relation between first-order properties of things in the world."* So what are first-order properties?[129] Things such as processes, objects and events have first-order properties such as weight, colour, charge, volume and so on (Chakravartty, 2007, p. 40). An abstract structure is typified as higher-order properties of relations.[130] Thus, the relation of, for instance, "being smaller than" and having the properties of "being smaller than" can be described as having a higher order property of x. As soon as relations can be described by x's and y's, they constitute an abstract structure. However, Chakravartty (2007) proposes a variant of realism, namely, Semirealism, that avoids the problems of epistemic StR—the latter views abstract structures as the answer to the problems of PI. However, Chakravartty (2007, pp. 40-41) thinks that it is possible for one abstract structure to describe two different concrete structures,

---

[124] *"… the central thesis of epistemic SR, that one can have knowledge of structures without knowledge of the intrinsic natures of things, cannot be maintained"* (Chakravartty, 2007, p. 42).

[125] Ladyman (1998) is credited with proposing ontic StR as an alternative for epistemic StR (Ainsworth, 2010). See also Chakravartty (2007, p. 34) Footnote 3.

[126] *"In other words, OSR denies the presumption that objects and their qualitative features are ontologically basic and that structures, so far as they exist, depend on the existence of these objects and their properties. OSR reverses this order of dependence and sees structures as ontologically basic, and posits that in so far as objects and properties exist, their existence depends on the existence of a structure"* (Frigg & Votsis, 2011, p. 260).

[127] See Ainsworth (2010, p. 51) footnote 4 for a discussion of Ladyman's and related views of structure as mathematical and/or physical.

[128] But does the belief in abstract structure commit one to real universals?

[129] Second-order properties or higher order properties are properties of properties. For instance, red is a first-order property of apple but being of a certain colour is a higher order property of "red" (Swoyer & Orilia, 2014).

[130] *"Abstract structures are precisely what Russell describes: higher-order, formal properties of relations. But one and the same abstract structure may be instantiated by many different concrete structures, as we saw in the example of the cakes and the spoons"* (Chakravartty, 2007, p. 40). *"The relation 'heavier than' is a qualitative relation between various cakes that obtains in virtue of their masses, which are first-order properties of the cakes"* (Chakravartty, 2007, p. 37).

110

which makes the abstract structure explanatory redundant. One should, therefore, as a realist focus on concrete structures[131]:

> *Concrete structures are relations between first-order properties of things, so to know them is to know something qualitative about relations, not merely their higher-order properties* (Chakravartty, 2007, p. 41) and *Concrete structures are identified with specific relations between first-order properties of particulars, and first-order properties are what make up the natures of things* (Chakravartty, 2007, p. 42).

Semirealism, consequently, avoids the scepticism of epistemic StR by maintaining that one can say and know something about relations *and* relata.

An essential point for Semirealism (SeR) is its view of how the burden of work is shifted to the properties of individuals (particulars or relata). Because the first-order properties of particulars are causally efficacious, these particulars cause events and processes to happen. Knowledge of the intrinsic nature of particulars is possible through knowing its properties. Because the properties are responsible for relations as well, knowledge of the relations implies epistemic access to particulars' intrinsic natures.[132] This is the first point of SeR; the second is that properties "*confer dispositions*" on things and these dispositions are their tendency to act and behave in certain ways (Chakravartty, 2007, p. 42). Another way of putting this is, as Chakravartty (2007, p. 43) says, structure and nature come together, similar but still distinguishable.

The next issue for SeR is how to regard real structure and particulars without SeR merely being a conflation of entity and epistemic structural realism. Chakravartty (2007) distinguishes between detection properties and auxiliary properties. Detection properties are those that are stable, carried over in different theories and which are minimally required for the theory to be about something. Detection properties are, of course, *properties* of things that constitute relations to other things with properties. Chakravartty (2007) provides the following guideline: "*The recipe of the minimal interpretation is austere, and straightforward: commit only to structures with which one has forged some significant causal contact, and understand the natures of detection properties in terms of dispositions for relations to other properties*" (p. 54).

---

[131] "*Structures thus defined are also referred to as 'abstract structures' to emphasise that neither the objects in their domain nor the relations have any material content. Abstract structures contrast with concrete structures, ones whose objects and relations are interpreted*" (Frigg & Votsis, 2011, p. 229).

[132] "*Knowledge of these relations thus gives the realist insight into the intrinsic natures of things*" and "*A particular's nature comprises its first-order properties, and natures are possessed whether or not particulars are, at any given moment, manifesting all of the relations of which they are capable*" (Chakravartty, 2007, p. 43).

5.2.4   A brief summary of Semirealism

Semirealism (SeR) goes further than Entity Realism (ER) and Epistemic Structural Realism (StR). SeR entails knowledge of both properties and relations as stated above in the sense of both providing epistemic access to the internal nature of particulars. It will be remembered that Entity Realism grounds our belief in entities in the extent to which they have effect on other things and to the extent we can manipulate them to do things. However, knowledge of relations are excluded from Entity Realism:

> *By emphasizing causation, ER captures the common and deeply held realist intuition that the greater the extent to which one seems able to interact with something—at best, manipulating it so as to bring about desired outcomes—the greater the warrant for one's belief in it* (Chakravartty, 2007, p. 58).

Epistemic Structural Realism says that, despite theories that change over time, there are certain mathematical descriptions of relations that remain unchanged (Chakravartty, 2007, p. 59; Ladyman & Ross, 2007, p. 94). These core descriptions probably show that there is something true in these theories. However, philosophy of science showed that structure is not always defined at a sufficiently detailed level as to be helpful to clearly indicate what counts as structure for realists. Thus, both ER and StR address what they believe should be the target for realists in order to counter one of the problems of realism, namely, pessimistic induction but each lands in different problems.

Semirealism solves the problems of both versions of realism[133] by (a) having a clear understanding of what is studied in science, namely, the *properties* of things, and (b) their *relations* which form the structure of reality. In order to account for core and stable truths of theories, the relations are described with mathematical formulae.[134] Structure is viewed as concrete and not abstract. The main aim of Semirealism is to retain core content of theories and distinguish this from auxiliary content. In this way Semirealism can account for the historical development of theory. Because the causal work is done by properties of particulars and their relations, Chakravartty (2007, p. 64) distinguishes between causal properties and auxiliary properties and, of course, the latter cannot be involved in identifying an object in successive theories.

---

[133] Entity and structural realism.

[134] "*According to semirealism, realists should admit only properties and relations with which the sciences have forged some sufficiently significant causal contact, and in most cases this knowledge is justified by a knowledge of relations that can be described mathematically*" (Chakravartty, 2007, p. 60). It must be noted that not all disciplines utilise mathematical formalization for description of relations (Chakravartty, 2007, p. 60).

5.2.5 Causality

According to Chakravartty (2007, p. 90) "… *the epistemic engine that drives realist beliefs regarding certain unobservable properties, structures, and particulars is causation.*" A more eloquent expression of the centrality of causation for the realist can rarely be found! However, this story comes with a twist. Unlike things, properties and events, the existence of the very unobservable "cause" cannot be empirically determined.[135] This was, of course, Hume's issue with causality (see paragraph 3.2.4.3 above). Chakravartty (2007, pp. 90-91) says that there are metaphysical concepts that the realist holds to be true, that cannot be empirically checked, but are required for the foundation of realism. Thus, *natural kinds*[136] and *causation* are metaphysical concepts the realist presupposes for a realist description of reality. Furthermore, *necessity*[137] is an aspect of causality required to enable distinction between contingent and necessary patterns[138] of events (Chakravartty, 2007, p. 93). The type of causal necessity we are after is *de re* necessity instead of *de dicto*, i.e. objective necessity, rather than subjective or conceptual.

The issue of causality is complex and has a long and chequered history (Cartwright, 1998; De Pierris & Friedman, 2013; Falcon, 2015; Groff, 2008; Porpora, 2008; Schaffer, 2014; White, 2013). Chakravartty (2007, pp. 96-102) discusses objections to the idea of causal necessity, one of which I will briefly refer to because

---

[135] "*Causal necessity is unobservable, and unlike many scientific unobservables, it is not even a possible object of detection*" (Chakravartty, 2007, p. 94).

[136] The concept of "natural kinds" goes further than classical concepts of natural kinds for the Semirealist (Chakravartty, 2007, p. 151). Classical views involve the idea that natural kinds are objective and given in nature but only in one correct way (Chakravartty, 2007, p. 175). Contrasting views emphasise mind-dependent (or constructionist) activity in taxonomical endeavours Bird and Tobin (2015). For the realist, objectivity and essence are imbedded in the concept of natural kinds (Chakravartty, 2007, p. 156). The concept is important because it provides ground for our inductive and classificatory practices (Chakravartty, 2007, p. 174). However, Chakravartty (2007, p. 175) says that the Semirealist need not maintain a strict opposition between a mind independent and dependent approach. Nature guides and we interpret! Some views restrict the intent of what we want to convey with natural kinds to clusters in biological science. Classification and its basis are different for the biological domain so that one can only speak of clusters of characteristics, rather than properties of a kind. For a good overview see Bird and Tobin (2015).

[137] Natural necessity: usually seen as that issue that distinguishes between co-incidental regular patterns and necessary regular patterns. Normally ascribed to causal mechanisms but seen as that issue that distinguishes between co-incidental regular patterns and necessary regular patterns. Chakravartty (2007) refines the concept in Semirealism. It is a causal *process* because the idea of a mechanism can easily be reified as a particular

[138] "*Thus, the mere existence of regular patterns of events including the regular behaviours of particulars may be sufficient for purposes of prediction, but, given the central role of causation as the epistemic engine of semirealism, it is not surprising that many realists are apt to wonder why such patterns exist at all*" (Chakravartty, 2007, p. 94). He makes a distinction between realists that are not causal realists and those that are. The causal realist sticks to an empiricist view with regard to causality, while the Semirealist can explain regularities because of her belief in natural necessity.

113

it applies to a central concept of Bhaskar's theory. The demand for a *causal mechanism* in science is necessitated by the so-called inability to present a coherent account of *de re* necessity. Causal effects can be described as thing A having an effect on thing B. If A is imagined as unchanging then it is very difficult to think that it can bring about a change in B. In fact, even if A changes, the issue of how it might effect a change in B still requires explanation. The postulation of a mechanism, which can easily turn into a mere black box , is required to act as go-between[139] between A and B (Chakravartty, 2007, p. 101).

Taking ordinary life instances of causation as exemplars, we might be misled to think that cause-effect holds between *events*. For example, the door opened because I pushed it or the wind blew it open; my teeth rot because I do not brush them and so on. The agent (thing[140] A in the discussion above) causes something to happen expressed as an event. According to Chakravartty (2007, p. 109), referring to events as relata of causal relations is a rough approximation of what is actually happening: there are much more detail waiting to be unpacked in order to give a proper realist account of causality. Chakravartty (2007, p. 105) points out that events-based talk[141] cannot work as an ontological explanation for causal mechanisms. Events can be demarcated in any way one pleases.[142] A more sensible way is to locate causal mechanisms within the properties and their relations in concrete structures (Chakravartty, 2007, p. 107).

A simple example by Chakravartty (2007), in his own words, is the property of mass, which allows a body that has this property, to accelerate when a force is applied to it, and he concludes that *"Causal phenomena are produced by the ways in which particulars with properties are disposed to act in concert with others …"* (p. 108). Events *appear* to cause other events but the actual causal agents are the properties of particulars predisposing them to act in certain ways. Chakravartty (2007) moves away from a simple linear

---

[139] *"Historically, the challenge to furnish a description of the nature of this connection has failed to elicit any detailed response. Metaphors abound: links; chains; ties; glue; cement; bringing things about; and perhaps most highly scorned of all, the 'powers' of ancient metaphysics which 'give rise' to subsequent phenomena"* (Chakravartty, 2007, p. 101).

[140] A thing can just as much be an event.

[141] *"Thus, causation is often described crudely in terms of events. One should be wary, however, of fixing ontological commitment simply on the basis of the grammatical form of these descriptions. Talk of events as the relata of the causal relation—'A causes B'—is elliptical for descriptions of aspects of continuous processes of the form 'A precedes B, and the object or objects involved in A have dispositions, some of whose manifestations are present in B'. Events that are changes generally overlap multitudes of changes in the properties of the objects concerned. They occupy time slices during which objects with causal properties are engaged in continuous processes of causal interaction"* (Chakravartty, 2007, p. 109).

[142] *"Here again, the idea that there is a special ontological category of entities, events, that stand in a special, causal relation, should begin to ring hollow in realist ears. For these events can be sliced up in almost any way one pleases"* (Chakravartty, 2007, p. 105).

concept of causality—although he explains it linearly [143] : "*Events that are changes generally overlap multitudes of changes in the properties of the objects concerned*" (p. 109). The point that he wants to make, though, is not about the complexity of interacting things, but about the continuous nature of interacting things that is summarised by the phrase *causality as process* (Chakravartty, 2007, p. 111). He is convinced that the process account of causality can counter many objections against the realist notion of causal mechanisms. However, one should concede that the demand for a causal mechanism might lie beyond the grasp of the realist: precisely how change is brought about at the moment of interaction might not be explicable (Chakravartty, 2007, p. 112). Chakravartty (2007, p. 111) acknowledges that both Hume and the empiricist have a point, we cannot observe a mechanism, but the realist assumes that this unobservable "moment" or link is real in contrast to the empiricist's sceptical conclusion.

5.3   Realism in social science

Now that we have a grasp of some of the issues involved in Scientific Realism via the route of Semirealism, the next question is: what value does realism have for social science and psychological science? Traditionally, SR has been the territory of the natural sciences. Luckily, Uskali Mäki endeavoured to translate SR theory and concepts for social science. In the next section, his particular version of SR will be explored with an eye to provide direction for my conception of psychological science.

5.3.1   Minimal Scientific Realism

Mäki (2002, 2005b, 2011b)is one of the few scientific realists not concerned exclusively with natural science. He made a number of appeals to Scientific Realism to include a social science subject such as economics within its ambit. What he calls the global theory of SR is mostly aimed at physics and some issues do not apply to economics and other social sciences even though the latter would like to be viewed as science. Two issues are important when applying a science theory to a field of science: one can keep the philosophy constant and argue that the field does not comply to the ideal or one can adapt the philosophy based on what is found in the field. Mäki (2011b, p. 4) prefers the latter. In the case of SR the success and nature of physics determined the tenets of its realism. One should consider whether it is fair to judge fields of science harshly that do not progress as well as physics and struggle with relevancy against a so-called ideal philosophy of science like SR. It might, thus, not be expedient to keep the ideal philosophy of science constant.

To take an obvious example: certain economic variables are exclusively mind-dependent, i.e. without people these constructs will not exist (e.g., a trading system). If mind independence is a criterion for realism then economics and psychology are immediately excluded from having a realist grounding. The avenue Mäki (2005b)

---

[143] As talk of "A causes B" shows.

proposes is to look at the requirements of realism, then see whether it can be sufficiently relaxed to include a specific field as realist and scientific. A version of Minimal Scientific Realism (MSR) is then developed, with flexible criteria, to allow for local variations of various scientific fields.[144] One-sidedly informed by the success of physics, the following tenets of SR must be dropped or revised (Mäki, 2011b, p. 5): (a) mind-independence, (b) unobservables, (c) theories are justifiably regarded as true (d) the epistemic performance of a theory is progressive (e) science progresses and, (f) the main task of a philosophy of science to rationally explain the success of the science against the backdrop of a concise summary of scientific realism: "*Current (good, mature) scientific theories are (justifiably believed to be) (approximately) true of a realm of entities that lies beyond the boundaries of ordinary (observable) realm of commonsense entities and exists independently of the human mind*" (Mäki, 2011b, p. 5).

Mäki (2011b) goes on to discuss the issues above and show how they can be relaxed to include varieties of local sciences that have varying degrees of success. He illustrates how Minimal Scientific Realism grounds economics and I would like to point to a few issues important for my discussion of psychology as science.

(a) Mind independence as a criterion does not hold for social science and psychology. Mäki (2005b, p. 243) made the interesting observation that without minds there will be no social reality, thus, social reality is mind- and representation dependent and the basic tenet for realism cannot hold.[145] Furthermore, "*Social objects characteristically do not exist representation-independently either…*" (Mäki, 2005b, p. 243). Social institutions, such as marriage, exist as partially constituted institutions. Trade is represented to some extent by the physical representation of money and the actions executed by people when trading. One should understand Mäki as referring to the representations and symbols held in people's minds as well. Thus, partial and full representations are concept dependent. The problem, consequently, is how one can maintain realism if some of the things we live with are mind-dependent and Mäki (2005b)

---

[144] Why should we care to defend scientific realism in more scientific fields than just the most successful parts of physics? Mäki (2011b, p. 5) makes the point that a defence of realism in more scientific fields than just physics lies in a scientific polemics against growing anti-scientific attitudes. I, thus, take it that a solid grounding in realism allows us to defend science for what it is.

[145] "*Mind-independent existence seems well equipped for accommodating the posits of the physical sciences. It fails in regard to the posits of (non-neuro) psychology and the social sciences. Consider the latter. Social objects do not exist mind-independently. If there were no minds, there would be no social objects. Social objects characteristically do not exist representation-independently either, they are rather at least partly constituted by representations. Money and marriage as social institutions as well as their particular instances—the euro coins in my pocket and my marriage—do not exist independently of a web of representations, including self-referential representations of money and marriage themselves. Many of these representations are explicitly spelled out (Treaties of the European Council, ''I will''). Such representations are among the essential constituents of social reality*" (Mäki, 2005b, p. 243).

proposes a relaxation on, either the side of science, or of the mind. His (2005b, p. 246) solution of talking about science-independence and theory-independence takes into account that what is at stake with scientific realism are scientific phenomena. Thus, a distinction is made between different types of discourse with regard to things we regard as real. Furthermore, Mäki (2005b, p. 247) questions the viability of talking about unobservables in localised versions of realism. Moving beyond physics and the issue of unobservables will require a reformulation of what is regarded as unobservable in a specific science. The example of dinosaurs and electrons might suffice and by implication, the stuff psychology talks about, such as agency, can be regarded as localised versions of unobservables.

(b)   Mäki regards economics as part and parcel of the social sciences, thus, his science theory, departing from SR, has important things to say about social science. He went some way beyond Bhaskar with applying realism to social science. Flowing from the above, is the idea of commonsensibles, a term he (2005b, p. 247) coined earlier and based on the idea of different images of sciences. A distinction can be made between the scientific image and the manifest image, which is similar to scientific and folk ideas of science and in this case social/psychological science and folk psychology and physics and folk physics. When speaking about the scientific image of, for instance a table, it would consist of talk of atoms and so on, thus, very specific unobservables, whilst the folk image of physics would talk about the same table very differently (Mäki, 2005b, p. 247). The commonsensibles[146] are the entities referred to in discussing the table. In social science the commonsensibles are not very different from each other in both realms of the manifest social and the scientific social.

(c)   Mäki (2011b) makes a distinction between practicing (social) scientists, philosophers and laypeople, all whom deal with and speak about the economy. Commonsensibles are used by laypeople and scientists alike, and the reality of these are usually undisputed, while philosophers might challenge their ontological grounding. In a sense this is helpful and reassuring to realise that the mind independence of commonsensibles is usually beyond dispute but does this really solve problem? Mäki assumes that the commonsensibles scientists/folk talk about exist[147] to a large extent, but what if they and Maki are

---

[146] *"Commonsensibles are the commonsense items we are dealing with in our daily lives, both practically and conceptually. … Commonsensibles are unlike sense data and they are unlike electrons. Commonsensibles are experienced, but the notion of experience is to be understood broadly: it involves introspection, inference, interpretation, culturally established meanings"* (Mäki, 2005b, p. 248).

[147] *"Practising social scientists are just like the rest of the ordinary folks: they usually regard the existence of commonsensibles as indisputable"* (Mäki, 2005b, p. 248).

plainly wrong? Take the example of the cult of the unicorn (see page **Error! Bookmark not defined.**): is the unicorn a commonsensible for both folk and unicorn theologians? Both folk and theologians assume the unicorn exists, and it features as an entity with causal powers. But is this the task of the philosopher, to point out that the entities scientists and folk talk about might not exist? The question remains how the discussion of existing things differs between natural and social domains. According to Mäki (2005b, p. 248) the crucial difference is that social scientists have ready access to the commonsensibles they study because commonsensibles are part of the domain under investigation. Mäki (2005b) states that social scientists share the common ground of folk concepts of a field, but concepts or commonsensibles are changed, refined and so on, to suit the needs of a very localised science practice: *"They are usually not concerned about the existence of those commonsensibles or about which non-commonsensibles to postulate"* (p. 249). Why is this? According to Mäki (2005b, p. 249) *"The major ontological issues in actual social science are thus not about the existence of the objects and properties depicted by their theories, but rather about their causal role and relevance in the functioning of social systems."*

(d)   How would economics proceed as a science? Economics is a theoretical endeavour involving a number of reworked commonsensical variables where researchers construct models of the economy and with these, try to predict real world events. The models are sufficiently simple and, in a sense, more sophisticated than the folk version of relationships between commonsensibles (Mäki, 2011b, p. 8). This means that models deliberately try to avoid the clutter of real world complexity by modelling the relationships between a select number of refined commonsensibles. Models provide epistemic access to reality and according to Mäki (2011b, p. 10) it is *"notoriously difficult."* Models often fail or succeed partially, and epistemologically hard work is expected from the scientist to make necessary adjustments. Mäki (2011b, p. 10) correctly states that this is an epistemological undertaking, rather than an ontological one, acknowledging the fallibility and also the social conditioned nature of theories and models.

(e)   Issues of truth of models or theories are also relaxed in MSR. One need not, from the start, claim the truth of a theory (i.e., that correctly reflects the state of affairs) because theories might possibly be true and only later need to be tested or subjected to claims of truth (i.e., that things are or are not so). As we will see below, this conception of truth is similar to Anderson's view of truth (see page 136). Mäki (2011b, pp. 9-11) makes an interesting observation: MSR requires possible truths but these will not suffice on their own because truths must be relevant. So the scientist is not merely after all truths or easy truths but only those that have a *"chance of being true"* and relevant to the current situation (p. 10).

(f)   Accordingly, MSR does not require claims to be true from the outset, but only that they have a chance to be true. In my opinion, this requirement is not all that different from Bhaskar's position: constructing models or analogues of mechanisms are postulated in the process of doing science, and claims to truth, i.e. whether a proposed mechanism is true is a matter of testing. We will return to this point later. The way Mäki formulates the softer requirement creates the impression that SR, from the start, a theory to be true, and I do not think this is the case. However, the explicit truth-securing delay built into MSR is made explicit and allows other sciences than physics access to Scientific Realism.

(g)   Mäki (2011b) discussed the requirements for a minimal realism which consists in (i) revising the requirement of mind-independence and clarifying science-independence (ii) revising the issue of unobservables and clarifying commonsensibles, and (iii) theories need not be approximately true form the start; they need to have chance of being true. It is not so much the existence of constructs that concerns the social scientist but the causal effect of the postulated commonsensibles. This view, however, exempts the social scientist and the for-ever-reifying-psychologist from critically examining their postulates and according to Michell (1999) relaxing truth claims from the start[148] can lead to pathological blindness, for instance, to the problems of measurement in psychology and the social sciences.[149] I discuss this issue later on (paragraph 2.2.3 above).

(h)   I think that the conceptualisation of minimal scientific realism is important to Mäki to enable economics to draw upon scientific realism and by proxy be regarded as a science.

5.3.2   Models

One very helpful concept Mäki (2005a, 2011a) worked on is the idea of models in science and the nature of experiment as a model. Some profitable principles may be gleaned from this discussion that also has something to say about CR and the issue of open systems. Bhaskar pointed out the main characteristics of the domains of the natural and social, the first being closable to some extent and the second in principle open. The ability to close systems is a *sine qua non* for the possibility of experiments

---

[148] Mäki (2011b, pp. 5-6) says, *"In contrast to [Standard SR], minimal realism does not require concluding that an entity Y exists. It is enough that Y might (or might not) exist. This idea finds itself in expressions such as 'Let's assume Y exists' and 'Let's try to find out whether Y exists' and 'We have (we still haven't) concluded that Y doesn't exist after all (that Y does exist)' and so on."* One can just imagine the full-blown psychological essentialist claiming the existence of personality characteristics on grounds of Mäki's concession!

[149] Please do not misunderstand me, I am very happy with the way Mäki (2005b) motivates a realist criterion for commonsensibles in social science. His grounding also provides a good motivation for using structural equation modelling; I just don't think in the light of consistent realist principles this idea can be sustained.

but this cannot be done in the social domain. Mäki (2011b, p. 3; 2012, p. xiv) acknowledges the difficulty of effecting closure in social systems, in fact, it is a major problem for economics and much criticism[150] has been levelled against economic theories and models for its inability to reflect and predict real-world events. However, we have seen that Minimal Scientific Realism can include economics as science, which means it is able to participate in the activities science is known for. Mäki's point is that a clear understanding of models, experiment, and their relationship will enable the economic theorist to methodologically participate in science, or stated in other words, to have epistemic access to economic reality. I will briefly summarise Mäki's ideas below.

(a) Mäki (2005a) argues for some similarity between models and experiments. First of all, a characteristic of models is that they bear an approximate resemblance to their targets (Mäki, 2011a, p. 55). Targets can be theory, reality or even data (Mäki, 2005a, p. 304). Models cannot represent fully and resemble but need to do so on relevant aspects. The point of representation is to enable epistemic access to the thing the model represents. Mäki (2005a, p. 304) says the reasons for using models are that the things they resemble might be too expensive to examine, it could be unethical to examine the thing, or they could be *"too small, too large, too far away in space or time or too complex"* to investigate. To count as a representative of another thing, the model must resemble it in certain respects. Mäki (2005a, p. 305) calls the characteristics of representation and resemblance the *semantic* aspects of a model.

(b) In a very clear discussion of the characteristics of a model, Mäki (2011a) presents a pragmatic view of models. This means that users' interests shape what is used as a model, but the choice of the model is also constrained by how it functions (Mäki, 2011a, p. 55). Hence, the representational aspect informed by representation and resemblance discussed above, determines to a large extent what in the model can be used profitably for epistemic access to the target. A model has a number of components constituting its structure and I will use the same symbols as Mäki (2011a, p. 55): the model (M), target system (R), purpose of model (P), audience (E) and commentary (C). Each of these elements determines what the crucial locus of truth of a model is. Mäki (2011a) argues that the main causal mechanism identified by the model is both the truth in and of the model. On its own, a model and its components are in a sense false when compared to the reality it refers to. A number of assumptions need to be made that are not necessarily true, but they enable an exercise of isolation and subsequent de-isolations and de-idealisations. This process entails that each of

---

[150] *"There is a long tradition of blaming economics for failing to meet the latter requirement and for focusing its efforts on building theoretical model worlds far removed from the real world—and then for conflating those substitute systems with the far more complex real systems"* (Mäki, 2005a, p. 305).

the conceptual constraints on the model is isolated then relaxed as one characteristic or assumption after the other is relaxed to determine its effect on the main causal mechanism. Mäki (2011a) moves beyond the usual view of models to a pragmatic one.

(c)   The meaning of a model, its function and its ability to clarify the operation of a causal mechanism that might be true of the real-world system, depend, among others, on how it is described (C). The description is aimed at a specific audience (E) which further constraints the model's meaning in terms of its purpose (P) it.[151]

(d)   Experiments are characterised by isolation [152] and manipulation. [153] In an experimental setup a number of variables are held constant in order to neutralise their influence, thus, effectively isolating the mechanism one wants to manipulate. [154] A system is produced as a representation of real-world conditions. Manipulation and isolation go hand-in-hand with the aim of showing the one causally efficacious mechanism. The experiment becomes a slice of reality or a representation of the world out there. As a presentation of the real world an experiment is a model.

(e)   Both models and experiments have resemblance, representation, isolation and manipulation in common, accordingly, Mäki concludes that experiments are models and models are experiments, however, not always. Models equals experiments and vice versa "… *for representations which involve the representative and resemblance aspects and which are subject to manipulations that effect isolations*" (Mäki,

---

[151] Mäki (2011a) uses a classic example of an agricultural economic system by Von Thünen to illustrate the pragmatic profitability of a model, as well as where to locate its truth (Von Thünen, Wartenberg, & Hall, 1966). It is also in my opinion an excellent example of modelling complex psychosocial systems.

[152] "*An experiment is an arrangement seeking to isolate a fragment of the world by controlling for causally relevant things outside that fragment*" (Mäki, 2005a, p. 303).

[153] "*In other words, a system of entities is manipulated in order to accomplish effective isolations of a limited set of properties and causal relations from the rest of the world. An isolated system is a simple and controlled mini-world in contrast to the complex and uncontrolled maxi-world. The isolation of such controlled mini-worlds is accomplished in order to utilise and enhance the capacity of such experimental systems to serve as epistemically successful substitute systems, as resembling representatives*" Mäki (2005a, p. 306).

[154] Mäki (2005a, p. 306) statement about manipulation in experimentation is not what one typically understands about the function of manipulation in experimentation: "*An experimental design typically suggests ways of manipulating 'other things', a number of potentially influential variables of a larger system so as to neutralise them, to prevent them from making an impact on what forces are in play and what happens in experimentally controlled situations.*" He understands manipulation as all the work done in keeping variables constant, whilst classically, manipulation is used to indicate the one or more conditions that are varied to enable the isolated mechanism to show its effect. Mäki's manipulation of variables is part of the process of isolation and the point he wants to make is that an experiment is under the control of *someone* producing a system in order to show a causal mechanism.

121

2005a, p. 306). For the purpose of economics, this qualified equality is sufficient to enable theorising. Mäki (2005a, p. 309) regards models as *theoretical* experiments because the isolation of variables is the result of the conceptual manipulation of assumptions, while experiments are *material* experiments where isolation of variables are concretely deployed.

(f) Thus, Mäki is able to move beyond Bhaskar's position of a principally open social reality. It is acknowledged that reality is complex, relatively incontrollable and difficult to isolate, but just as Bhaskar's concept of the process of science depends on experiment and conjectural mechanism, so does Mäki's model-experiment equivalency enable epistemic access to mechanisms in the social domain. Of course, he developed his view of models and experimentation for economics but his ecumenical reach goes far beyond economics to include psychology as well.

5.4 Situational Realism

In this section I would like to consider John Anderson's (1893-1963) realism. He was a Scottish philosopher who, at the turn of the previous century, moved to Australia, was lecturer at the University of Sydney from 1927 to 1958, and made a lasting impression on philosophy and psychology on that continent, an impact that is only now explored as a profitable perspective for psychological realism (Baker, 1986; Hibberd, 2010, 2011; Maze, 1983). The work of John Anderson is mostly available in collections compiled as books. These consist of individual lectures and writings from different occasions.[155] For instance, the work, *Studies in empirical philosophy* (Anderson, 1962j), is available as a hardcopy but also within a digital repository of the University of Sydney. I have used this particular source to discuss some of Anderson's work. The individual chapters were written on different dates although the main compilation's publication date is 1962. I have regarded it as an edited work with the editor and chapter authors as Anderson. The title of the chapter along with its date are noted in the references so that there are a number of Anderson references with alphabetic characters attached to 1962 as per APA guidelines.[156]

---

[155] Luckily, before PowerPoint, lecturers tend to write their lectures out.

[156] An example is: Anderson, J. (1962a). Empiricism (1927). In J. Anderson (Ed.), Studies in Empirical Philosophy [A Machine readable transcription] (pp. 3-14). Sydney: Australian Digital Collections, The University of Sydney.

5.4.1   Introduction: the philosophy of John Anderson

John Anderson's[157] Situational Realism[158] (SiR), also called "direct realism" or "Australian realism," in some sense goes beyond Bhaskar's realism (Hibberd, 2005, p. xi). According to SiR, reality is unitary (Anderson, 1962d, p. 162; Hibberd, 2011). Ontologically, it means a rejection of dualism or any view that espouses a levels-of-reality thesis. Baker (1986, p. 1) calls it *"ontological egalitarianism"*[159] (Mackay & Petocz, 2011b, p.34). No distinction is made between, for instance, body and mind, or consciousness and natural reality, as separate substances calling for different ways of analysis. Thus, epistemologically mind and nature cannot be differently investigated and known. Theoretically, this means that a principled distinction between ideographic and nomothetic, and human/social sciences and natural sciences cannot be made (Hibberd, 2011, p. 124). Hermeneutics and empirical approaches apply just as much to the natural as to the human/social sciences. However, a unitary reality or being does not imply a unification of method. Both social science and natural sciences are based on critical inquiry of which interpretation is an integral part.[160]

In addition, (Anderson, 1962e, p. 33) regards constitutive relations as characteristic of idealism, causation is seen as complex and as a process, and he rejects atomism but emphasises distinctiveness in space and time. Certain typical psychological accounts of constructs do not exist and he takes a broad swing at consciousness and similar constructs. Representationalism[161] characterises cognitive

---

[157] John Anderson was a Scottish philosopher who arrived in Australia in 1927. He was appointed as chair of Philosophy at the University of Sydney. See (Hibberd, 2011) for a brief overview of his development and history.

[158] (Hibberd, 2011, p. 64) summarises Anderson's contribution to realism as follows: he *"… offers an Heraclitean account of causation-as-process, argues against social and physical atomism, provides an objective foundation for qualitative and idiographic research, identifies beliefs, concepts, schemas, mental representations and the like as non- existents, and makes clear the logic of relations, the importance of the categories and the central role of critical inquiry in furthering any science."*

[159] Hibberd (2010, p. 44) puts it very well: *"Obviously, parts of a system can be configured to form a particular relational structure and this system will have certain qualities, but this does not license the inference that its qualities exist at a higher level than its parts, nor that these qualities are 'emergents', nor that the psycho-social, for example, is reducible to the biological. The key point is that 'levels' are not part of the world's furniture."*

[160] "Both are underpinned by the same set of general categories, both aim to study types of situations or occurrences in space and time, systems of interacting processes, i.e. both aim to discover what is the case. In both there are practical obstacles to objectivity, including psycho-social-political interests and forces and the sheer complexity of the phenomena studied. Both involve the making of interpretations, both have a unifying method, namely, critical inquiry, and measurement is not essential to either" (Hibberd, 2011, p. 67).

[161] I will use "representationalism" in this chapter. Some authors use the "representationism" but I suspect it points to a bit older usage ("Representationism," 2015). Both refer to things inserted between mind and reality, i.e. representations ("Representationalism," 2015).

123

psychology (and rationalistic/idealistic philosophy) and needs to be fundamentally revised.

In the following section a brief discussion will touch upon the following aspects in order to identify important points for realism in psychology: ontology, epistemology, being, the meaning of situational and propositional, relations, truth, meaning and argument, among others.

5.4.2 *Ontology and epistemology*

Anderson (1962c, pp. 3-4) views ontology as primary and believed that one should not start with epistemological questions[162] (Baker, 1986, p. 19; Hibberd, 2010, p. 38): *"In his eyes, indeed, epistemological questions are always secondary to logical (or, some would say, ontological) questions. A realist theory of knowledge, he thinks, is a particular application of a realist theory of relations, flowing out of the rejection of "constitutive" relations and taking the form of an attack on what Anderson calls "relativism""* (Passmore, 1962, p. xii). In fact, the epistemology of the empiricists posits the mistaken notion of mediated knowledge, i.e. the fact that one cannot know reality directly but only through sense impressions, ideas or representations. This much Anderson has in common with constructionists, namely, the belief of unmediated knowledge of reality[163] (Hibberd, 2011, p. 73). In one fell swoop Anderson (1962) got rid of logical positivism's phenomenalism, and empiricist and Cartesian epistemology, namely, that reality is known indirectly through concepts.

A related point is Anderson's insistence on the logical independence between things that exist and the relations between them. For instance, operationism[164] holds that the act of measuring constitutes the thing measured, but *"this has idealist implications because it denies the logical independence of what is known from the means by which we come to know it"* (Hibberd, 2011, p. 76). Furthermore, realism's dictum that things exist independently implies that things certainly do not depend on a mind studying them. Taking it a step further, when one perceives or studies something, the mind is not, likewise, included in the knowledge of the object (Anderson, 1962f, p. 61). Anderson (1962c, pp. 11-12) rejects both classical empiricism and rationalism's ontology and epistemology. Ontologically, there are no distinct things or essences and even if the mind is invoked to relate the sense impressions of atomistic things, epistemologically, like Hume, Anderson denies the mind this "binding" or relating function.[165] However, even Hume's distinct existences must be rejected (Anderson,

---

[162] Between rationalism and empiricism *"… the dispute is about ways of being or of truth, not about ways of knowing truths"* (Anderson, 1962c, pp. 3-4).

[163] *"Ideas, beliefs, concepts, percepts, images, sense data, schemas, appearances, propositional attitudes, etc., are all misguided reifications"* (Hibberd, 2011, p. 72).

[164] See below.

[165] *"And Hume, while admitting that no such coherence could be imposed upon isolated data, still maintained that the data of sense were isolated, and accordingly could not show how science is possible. The rejoinder of idealists*

1962c, p. 12). Thus, ontologically, different ways of being (i.e., having a multiplicity of distinct things) and epistemologically, different ways of knowing (i.e., through sense impressions and/or ideas), must be rejected (Anderson, 1962c, p. 12).

An issue that unites Anderson and the New Realists (discussed later, see paragraph 10.3 below) is their total abhorrence of idealism[166] that had a tenebrous effect on various aspects of scientific theorising and metatheorising. Idealism is understood not only as including a mind-dependent reality but also mind, conscious and/or being as a totality of what is real, or something such as the Absolute which eventually incorporates all differences in one totality of truth (Sprigge, 2005, p. 432). Hegel's dialectical logic of thesis-antithesis-synthesis illustrates the movement from opposites to the emergence and incorporation in a higher totality very well (Baker, 1986, p. 9).

I would like to point out an issue that let me think twice about what Anderson meant about the difference between idealism and realism. Realism (and empiricism, this last point will be explained below) denies multiple ways of being (Anderson, 1962f): there is only one way of being (Anderson, 1962c, p. 3). Idealism seemingly does not deny multiple ways of being and endorses relative knowledge of reality. At first glance, the one-way-of-being postulate sounds like monism, a position used to characterise idealism. However, pluralism characterises realism—things are distinct and not constituted by their relations, which opens the important possibility of discourse and science. How should we understand monism–pluralism and relativism–"one-way-of-being" where the first term in each phrase typifies idealism? The next few points will focus on this question.

(a) *"One[167] way of being."* To Anderson this is a *sine qua non* for realism. It means that we do not have different sorts of realities, levels of realities or kinds of realities. We especially do not have mind and matter. There is only one truth, namely, matters of fact or the way things are (Anderson, 1962c, p. 4). Mind-matter is only part of the story. Anderson also denies lower order and higher order realities. Furthermore, he denies that different principles operate in different domains of being such as determinism in the natural realm and voluntarism in the socio-psychological domain (Hibberd, 2011, p. 142).

---

like Green that Hume's position leaves out of account the function of the mind as a relating agency, that it takes as real what has not yet been made real by the work of the mind, is no reply. Hume's argument is precisely that neither mind nor any other agency could possibly perform such work on 'distinct existences'" (Anderson, 1962c, p. 12).

[166] *"If theory is to be possible, then, we must be realists; and that involves us in a denial of monism, or of a Being which is the whole, a 'universe', and in the assertion of a single way of being (as contrasted with 'being ultimately' and 'being relatively') which the many things which we thus recognise have"* (Anderson, 1962f, pp. 62-63).

[167] Are there different ways of knowing as opposed to one way of being?

(b) Idealism faults in viewing truth as higher or lower, complete or incomplete. Against a levels-of-reality thesis Anderson uses his version of a transcendental argument: *"The chief, and I think final, objection to any theory of higher and lower, or complete and incomplete, truth is that it is contrary to the very nature and possibility of discourse; that it is 'unspeakable'"* (Anderson, 1962c, p. 4). The brief point is that anything that lies within the grasp of our understanding should be expressible, hence, as a proposition, the most fundamental expression of matters of fact: x is y. If it does not express something as a matter of fact, then it is in principle *"unspeakable"* and beyond our understanding. There are then no higher truths than matters of fact: one cannot distinguish between grades of truth such as truth and more-truth [168] (Anderson, 1962c, p. 5; Baker, 1986, p. 4). The implication is that the classical characterisation of truth in Realism, including the variants discussed above, as approximate, does not apply in Anderson's theory. The question is how he deals with issues such as pessimistic induction discussed above (paragraph 5.2.1).

(c) Discourse is only possible when one can make claims of a certain sort about things. The claims pertain to the way things are. When one is not able to make a sensible/intelligible/refutable claim about something, it is in principle "unspeakable."[169] Anderson deals with approximate truth via the route of the possibility of criticism: difference enables discourse and specifically critical or scientific discourse, just because we can never be sure that final truth has been reached. Any claim can be challenged.

(d) How does Anderson view idealism? He rejects the notion of absolute truth or being. If all truths are seen as participating or contributing to a so-called higher truth then it is idealistic or a version of Absolute Idealism (Anderson, 1962c, p. 5).

In idealism nothing is independent, but part of a greater whole. This claim also affirms relativism, but it also points to a strong monism (Anderson, 1962i, p. 42). Consequently, if a theory makes claims about the whole or only truth, it is in essence an expression of (absolute) idealism (Anderson, 1962f, p. 61). Idealism tends to make issues dependent on other issues, which entails a relativistic[170] conception of reality (Anderson, 1962i, p. 41).

---

[168] *"And logically there can be no alternative to 'being' and 'not being'; propositions can only be true or false"* (Anderson, 1962c, p. 5)

[169] The unspeakability of things beyond empirical experience and observation reminds one strongly of the logical positivist programme. Things not reducible to observation statements or propositions are non-sense!

[170] Baker (1986, p. 6) says Anderson uses the term "relativism" as a technical term for the confusion between relations and qualities. Elsewhere Baker (1986, p. 10) discusses the confusion between the terms of the model xRy. Any conflation of terms and relationship is relativism for

126

The matter of constitutive relations is a core issue for idealism according to Anderson (1962i, p. 46). Objects, things and the like, constitute each other by standing in particular relations. However, Anderson argues that for things to stand in a relation they must be independent: the man and the hat standing in a relation does not change the hat into something else and the same goes for the man. Independence is denied by idealism since differences are merely relative to other things.

Idealism makes debate, discussion and theory impossible:

If theory is to be possible, then, we must be realists; and that involves us in a denial of monism, or of a Being which is the whole, a 'universe', and in the assertion of a single way of being (as contrasted with 'being ultimately' and 'being relatively') which the many things which we thus recognise have. This is just that independent existence of

---

Anderson. Another example can be found in Baker (1986, p. 54) where he speaks about committing the logical error of relativism by characterising the mind by its relation of knowing. Do we take, then, that Brentano's concept of intentionality commits this logical error? In another example discussing the ethics of Anderson, the error of relativism is pointed out as confusing relations with qualities (Baker, 1986, p. 131). Thus, when we define something like "good" by means of the act of doing good or bringing about good, then we commit the error of relativism. The error entails confusing relations with qualities: *"But that is the fallacy which moral theorists regularly commit: they illogically confuse or conflate questions about what things are in fact good and what are their particular characteristics, with relational questions about wanting or promoting goods."* So what is a "quality"? Quality is some characteristic of an object such as a property or attribute: the ball is round or the ball is blue. Round and blue indicate properties or qualities. How is it possible to confuse a quality/property/attribute with a relation? If we say "the ball rolled down the hill and broke the window" then "rolled down" seems to be the relation and "broke the window" the effect. Thus, by virtue of being round or having the property of round it caused a broken window. According to Anderson's reasoning, the relation "rolled down" has got nothing to do with the distinct nature of a ball having the property of being round: *"… to confuse relations between situations with the properties of things is to make a categorial error"* (Hibberd, 2011, p. 139). Earlier, Hibberd (2011, p. 138) notes that in psychology relations and properties are frequently mixed: *"'Conscientiousness', 'vulnerability', dispositions generally, 'intentions' and 'desires' are relations, not internal mental states. This does not preclude their causal efficacy as complex situations but their effects are not part of them."* Thus, something like vulnerability is frequently viewed as a state (characteristic, quality, property, attribute) of a person but it is a relation, hence, ontologically distinct from the person, but as Hibberd says, it still can be causally efficacious. Blackburn (2008) illustrates relativism with the following statement, *"truth itself is relative to the standpoint of the judging subject."* Therefore, relative in this context means in "relation to." Anderson's interpretation of mixing relations and qualities is, consequently, a very concrete view of relativism.

A better example might be Anderson's opinion of relativism in aesthetics. Baker (1986, p. 134) provides a nice example. If a work of art is pleasing to someone, then "being pleasing" is not a fundamental characteristic of the work. "Pleasing to" is a relation and one must ask if the artwork is pleasing to John, and what in the piece of art makes it pleasing? Although one can appreciate Anderson's objectivist aim, namely, to judge a work on its own merit and not relative to the characteristics of the creator of the work, it seems as if his definition comes close to the following: *"Relativism is frequently rejected on the grounds that it is essential to the idea of belief or judgement that there are standards that it must meet, independently of anyone's propensity to accept it"* (Blackburn, 2008).

127

which realism speaks; more particularly, it is occurring or happening or being in Space and Time (Anderson, 1962f, pp. 61-62).

(e)   Idealism is characterised by a commitment to a mind-dependent reality. Broadly, idealism can be divided into Berkeleyan subjective idealism, Kantian Transcendental Idealism and Hegelian absolute idealism (Hamlyn, 1995). Two versions concern us here: absolute idealism and representationalism. Absolute idealism posits everything that exists as part of a higher mind, spirit or absolute. The object and consciousness is the same and consciousness is the same as self-consciousness (Hamlyn, 1995, p. 387). The connection with mind is the crucial element and the many variants incorporate mind dependence and/or representationalism in various degrees. Idealism is not a pure rationalist endeavour and one can find various forms in empiricism, rationalism and some versions of realism (Hamlyn, 1995). Indeed, Anderson (2005) frequently bemoaned the fact that some of the philosophers he studied, such as Alexander (1920), calling themselves realists, still adhered to idealist concepts, thus, obfuscatingrealist theories. For our purpose it is important to understand Anderson's (and that of the new realists) (see paragraph 10.3 below) campaign to eradicate idealism from theories, but especially why idealism can be regarded as anti-realism. *"Less grandiose"* versions of idealism came to the fore as opposed to versions such as Absolute Idealism which posits absolute mind behind nature (Rescher, 1995, p. 356). Idealism is premised on the fact that minds are required to know reality. Thus, idealism does not have to go as far as postulating a mind constituting material reality, but at minimum, a mind is required to make sense of reality (Hamlyn, 1995). Rescher (1995, p. 356) puts it nicely:

Idealism need certainly not go so far as to affirm that mind makes or constitutes matter; it is quite enough to maintain (e.g.) that all of the characterizing properties of physical existents resemble phenomenal sensory properties in representing dispositions to affect mind-endowed creatures in a certain sort of way, so that these properties have no standing without reference to minds Rescher (1995, p. 356).

Even if we manage to refute idealism's various positions, one fact surely must be conceded—despite what I believe to be correct, namely, the mind-independence of reality—if we as human beings want to say anything about reality it cannot be but through a mind (Rescher, 1995, pp. 356-357).

5.4.3   Being and becoming

Anderson's view was based on Heraclitean philosophy that says the world is forever changing and complex (Baker, 1986, p. 29). Therefore, reality is process, but endurance or constancy is part of the process of change. Things do not always change at the same time, but the world moves through phases (Hibberd, 2011, p. 68). This process view of reality stands in opposition to substantialist metaphysics where

things are fixed substances and only attributes change. Furthermore, process underlies Anderson's view of things as distinct and related. He based this observation on human practise to treat things as distinct and related or connected (Hibberd, 2011, p. 69). This means that when people interact with things, from other people to social realities (such as banks), they treat them as distinct things and not as abstract concepts. Abstract, in this sense, is the opposite of interacting with things that are spatiotemporally situated. Of course, things are never isolated or singular in the sense of being atomistic, or devoid of connections. Everything is connected and complex on a number of embedded levels.

5.4.4 Situational

Anderson's approach is called *Situational Realism* because everything that exists exist in space-time[171], thus, in situations:[172]

> *More broadly, it might be said that we cannot uphold any doctrine of kinds of reality, since to do so we should have to know the distinction or the relation between any two such kinds, and that is something we could not know except as a single situation — which would mean that we knew it as of a single reality, so that the doctrine of distinct kinds of reality would be automatically abandoned. It is in this way that empiricism is seen as a doctrine of what is real as situations, and that therewith goes the denial that anything can be known except as situations, which is to say except as spatio-temporal and except in propositional form* (Anderson, 1962d, p. 162).

Furthermore, *"Situational Realism, holding that reality consists of states of affairs, necessarily complex, and propositional in form, opposes the 'thingist' view of the real (that reality is 'things out there' floating about in space and time)"* (Mackay & Petocz, 2011b, p. 36). Situations exhaust reality and they are complex and changing. Bhaskar (1975) views events as the manifestation of deeper level mechanisms, therefore, the Humean view of causality as the constant conjunction of events does not sit well with situations.

As seen above, SiR rejects atomism, distinct essences or levels of reality. Things that are distinct in situations but related are given directly. Situations are connected[173], thus, relations are real, and things or situations are complex (Mackay & Petocz, 2011b, p.36). In Anderson's (1962d) own words:

---

[171] The classical space-time distinction between objects and mind as discussed in philosophy of mind is, thus, not accepted by Anderson.

[172] *"There is nothing less than the situation and nothing but situations exist. Anything that exists or occurs, whether it be a stone, an emotion, an individual, a social movement, an event, a war, a Federal election, a causal process, etc., consists of situations or occurrences"* (Hibberd, 2011, p. 126). How does occurrence differ from Bhaskar's rejection of events as the basis for causality?

[173] *"And this is the point of departure of the 'radical empiricism' of James. Mind is not required to relate things, because things are given as related just as much as they are given as distinguished. Connections and distinctions, in fact, are given together; and those who argue that the work of the mind is required to connect distinct*

129

Thus our recognition of distinct complex things is not accounted for at all by 'collections of ideas' (of separate, unitary pieces of content) but is intelligible only as a recognition of complex situations, of situations within situations (in which terms alone 'concomitance' can be understood), of interpenetration as well as juxtaposition — in other words, of infinite complexity (with no least and no greatest situation) in place of the 'simplicity' which cannot be squared with any complexity or combination (p. 164).

The idea of situation is a loaded one. Anderson (1962c, p. 12) rejects atomism but views things as distinct yet connected.[174] This distinctness-yet-connectedness is apparent in situations, it is what makes a situation complex. Also, there is nothing but situations or occurrences[175] (Hibberd, 2011, p. 126).

In contrast to Kant's view that space-time and relations are imposed by the mind,[176] Anderson regards these as real (Hibberd, 2011, p. 127). Relations (and distinct things) are objectively real, meaning that they are not imposed by the mind. Keeping the discussion of Chakravartty (2007) about relata and relations in mind (see paragraph 5.2.3 above), it is interesting how Hibberd (2011) formulates an example of both: Anderson *"takes it that a chair consists not only of properties that stand in certain relations to one another, but is itself located in space for a certain period of time—existence is spatio-temporal—and may come to stand in other relations, such as when the chair is sat on"* (p. 127).

According to (Hibberd, 2011, pp. 127-128) the reality of situations applies across natural, psychological and social phenomena: all are complex situations with real relations and distinctive relata. Better yet, they take place in space and time as *"… a plurality of infinitely complex situations"* (Hibberd, 2011, p. 128).

5.4.5 Propositional

The claim that reality is propositional means that when we make a statement about reality, we make a statement about a possible state of affairs. The implication is, of course, that when a statement is part of a narrative,[177] it is a possible claim about

---

things, might equally well maintain that work had previously been required to distinguish them" (Anderson, 1962c, p. 12).

[174] *"There is distinction and connection among that which exists or occurs. The connections are not phenomenal, given by a priori knowledge, they are real"* (Hibberd, 2011, p. 127).

[175] *"Anything that exists or occurs, whether it be a stone, an emotion, an individual, a social movement, an event, a war, a Federal election, a causal process, etc., consists of situations or occurrences. For this reason, Anderson's philosophy may more accurately be referred to as 'situational realism' than 'Australian realism'. Situations exhaust the whole of reality"* (Hibberd, 2011, p. 126).

[176] In distinguishing the knower or judge from what is known or judged, Baker (1986, p. 30) says *"It is the former - involving our interests and wishes - that leads us to select certain occurrences to think about, but this does not mean that our so selecting makes truth depend on us."*

[177] I.e., telling somebody something about something else.

130

reality.[178] As seen above, SiR assumes that that things stand in relation to other things. One can speak of a subject having a relation with an object. Things or objects are distinct, i.e., existing in singular points in space and time, and with particular properties. Relations are not intrinsic to things (Mackay & Petocz, 2011b, p.38) but exist between things and do not constitute things (Mackay & Petocz, 2011b, p.39).

A distinctiveness of a state of affairs can be asserted within a particular point in space and time—this is what Anderson (2005, p. 108) means when he says reality is propositional. Of course, he polemicizes against idealism, which maintains the relationship of things to an absolute. The conflation of thought or mind with things, as in idealism, is plainly wrong (Anderson, 1962g, p. 86). If we want to study the mind or thought, it must also be within the framework of a propositional reality, i.e. as an assertion at a particular point in time and space of the state of affairs of a particular thought[179] (Anderson, 1962a, p. 108). Consequently, this study is done historically.

The usage of the term proposition is controversial to modern ears allergic to positivist talk. According to Michell (2012b, p. 11), Anderson's usage is declarative,[180] thus, referring to a state of affairs. It is unlike logical positivism's usage of proposition as expressing a basic observation to be verified, i.e. the notion that a linguistic statement expresses the truth if it corresponds to reality (Hibberd, 2005, p. xii).

5.4.6   Relations

From the previous discussions it became clear that real things are encapsulated in situations and conform to the basic propositional structure, x is y. Situations consist of complex things that are both distinct yet connected. More than once the idea of connectedness or relations comes under discussion in SiR. Relations are not things or substantive. They are, however, real and are located between instances of

---

[178] *"But in Anderson's realism 'all assertions' means just that: No claim is ontologically parenthetical or in any other way fails to be a claim about reality. A claim about logic or implication is in situational realism about the very forms of reality, and the same order of being as any other"* (Mackay & Petocz, 2011b, p. 37).

[179] *"What is required for the emancipation of psychological science, in particular, from identity-mongering is the abandonment of the notion of 'thought', as something either to be contrasted or to be identified with things. Our thoughts are just our dealings with things; and this pragmatic view, developed to some extent by James and at least suggested by Marx, enables us, setting things on the level of historical facts, to stress that in which scientific objectivity is to be found, viz., the proposition. 'The thought in things' can usefully mean not any ultimate or cosmic significance, not any evolutionary purpose, but only their propositional and consequently assertible character. Whether we assert or recognise any particular fact or not depends on our character and our historical situation, i.e. depends on our being here and such, while it is there and so. The recognition of a single logic of events, of complex things interacting in Space and Time, disposes at once of the logic and of the psychology of 'thought'"* (Anderson, 1962g, p. 86).

[180] *"Because situations are propositional, each situation possesses a subject term, and in that situation the subject locates the predicate term: that is, where the subject is located, there the predicate term occurs. Anderson thought that the identity of the subject term resides in its spatiotemporal location and, so, to be is to be located"* (Michell, 2012b, p. 14).

things. It can be simply modelled as *aRb* where *a* and *b* are relata and *R* the relation. Relations hold between two or more things, never within one thing, therefore, relations are never internal.[181] The terms that I have used are actually not appropriate; it should not be "things" since it has substantialist overtones. The way Anderson refers to instances, things, events and so on is to talk of situations (Hibberd, 2011, p. 74).

Relations cannot be internal, thus, a thing cannot have a relation with itself and *aRa* is not ontologically possible.[182] The entity *a* can have parts and these parts can stand in relation to other parts but it should be clear that the principle of embeddedness of situations cater for parts of a thing having relations. The peculiarity of this principle becomes apparent when Hibberd (2011, p. 136) says "… *more controversially, no individual can determine itself; I cannot cause myself to act.*"[183] Hibberd (2011, p. 136) continues, "*In everyday discourse, we might say 'People are self-determining', but this way of talking fails to recognise a relatively simple piece of logic—relations hold between, or connect, different real things (situations).*"[184] Hence, even the phenomenological statement that consciousness can know itself is false and ignores the simple logic that relations hold only *between* things (Hibberd, 2011, p. 137).

Anderson denies logical dependence between situations but not material dependence. Logical independence is the opposite of something being constitutive,[185] and as Hibberd (2011, p. 138) says, "*this notion of independence is the sine qua non of realist philosophy.*" If we speak of two terms in a relation, the terms can, of course, be a situation with its own terms and relations. Situations can be embedded. The point is that on any level of analysis situations stand in relations, some may function as subject or predicate and in other contexts predicates can be subjects, but never will either terms in combination or alone be determined by each other. A situation may be changed for having stood in a relation, but the relation is always external.

The subtlety of Anderson's view of relations become apparent when he criticises Alexander (1920) for the following view. In fact, Alexander talks about *compresence*

---

[181] Contra Idealism's view of relations being internal.

[182] "*Entities are not constituted, not even partially, by the relations they stand in*" and "*The principle here is that relations are not intrinsic to the items standing in those same relations*" (Hibberd, 2011, p. 75).

[183] The inability of an individual to cause itself to act stands contrary to assumptions of self-efficacy (Bandura) and persons as powerful particulars (Harré).

[184] "*We hold revered beliefs about human autonomy, hence the prevalence of non-deterministic notions, such as indeterminism, purposivism, teleology, and self-determinism. Coherent concepts of agency and self-hood cannot assume such non-deterministic notions and much 'under-labouring' is necessary to clear up these confusions*" (Hibberd, 2011, p. 146)

[185] Hibberd (2011, pp. 75-76) points out that Anderson finds the notion of constitution in psychology's operationism, Kuhn's view of science, positivism, and social constructionism. The problematic issue of operationism in psychology holds that the act of measuring something constitutes that thing!

that has overtones of the simultaneity of situations. Anderson (1962f) quotes the following from Alexander:

The two elements which are the terms of the relation are, on the one hand, the act of mind or the awareness, and, on the other, the object of which it is aware; the relation between them is that they are together or compresent in the world which is thus so far experienced (p. 62).

On a first reading one might wonder how this account differs from Anderson's own model of *aRb*? However, Anderson is quick to point out that this definition subsumes the relation under the first term of the so-called triadic structure. The first term should simply be the mind or cognition, the second term is the tree and the relation is the act of perceiving, awareness or consciousness. The mind, brain or person is the thing *doing* the perceiving (Anderson, 1962f, p. 63). To put it bluntly, a major concession to idealism would be made if the situation of knower and known would become one, i.e. having a situation of simultaneous and holistic knowing[186] taking place in one epistemological situation (which then becomes an ontological event).

One of the main questions to be explored is how we should imagine thinking, perception and so-called relations between things to be. The book on the desk is a situation easily imagined and the relation of "on something" changes when the book is put on the dinner table. The relation is unobservable but nevertheless real. It also fulfils the non-constitutive relationship requirement: nothing in either the book or the table constitutes "on." Only by putting it on a table does the relation become real.

Let us consider the issue of knowledge: the issue of non-constitutive relations applies here as well. A knower *a* knows *R* something *c* which can be a fact, event, state of affairs and so on and cannot be constituted by *a, R, aR* or *Rc* in *aRc* (Hibberd, 2005, p. 110). Perception works in a similar way: *"Just as what is perceived cannot be constituted by its being perceived, so what perceives cannot be constituted by its perceiving; both perceived and perceiver, according to Anderson, must be complex states of affairs—variously describable occurrences"* (Passmore, 1962, p. xii). Facts reflect a state of affairs and can be expressed by language but are not represented by statements or linguistic utterances (Hibberd, 2005, p. 111). Constructionists and others view knowledge as something produced but not discovered.[187]

---

[186] *"But if what we experienced were always a situation in which knower and known were together, if that were what every bit of the world that we came across was like, then the idealist conclusion that the world is a system of knowings would be irresistible"* (Anderson, 1962f, p. 64).

[187] *"The consequence of drawing the boundaries in this way is that what is captured by the ordinary meaning of the word 'knowledge' (and by standard philosophical analyses of the concept of knowledge) is ignored; that is, that knowledge excludes ignorance, error, and mere opinion … It involves discovery, not production. Similarly, with the word 'fact'*

133

Things, events, facts and so on are not constituted, at least not by the knower! Accordingly, constitutive relations are thus the opposite of (mind) independence (Hibberd, 2005, p. 112). Hibberd (2011) refers to the fallacy of constitutive relations in logical positivism, social constructionism and even Kuhn's account of science: *"All share the conviction that what is known is constituted by the characteristics, activities, cultural milieu, etc., of the knower"* (p. 138). Also, the knower is not determined by either the relations or objects: *"… we cannot define the nature or character or constitution or 'what is it' of a thing by saying what relations it has or what it is related to"* (Anderson, 1962i, p. 42). These claims have important implications for constructionism and even for Bhaskar's transitive domain and the process of constructing and testing claims. A second question is how we should imagine consciousness and perception as a relation: does biology not teach us that seeing is biological, i.e. within the organism that sees?

5.4.7   Causality

A final important characteristic of SiR is its view of causality. Causality is not linear and singular but consists of *"interaction at all points,"* i.e. things are caused by multiple other things (Hibberd, 2011, p. 147). Anderson (1962h), accordingly, developed the concept of a causal field to express the multifariousness and complexity of causality. First of all, in previous chapters it was seen that Hume's view of causality is logical independence and a constant conjunction of events, and a repetition of these conjunctions. Both Anderson and Hume agree on the logical independence of causality, but this is as far as it goes (Hibberd, 2011, pp. 146-147). From the concept of relation we have seen that relations cannot be constitutive, thus similarly, in cause, the relation cannot constitute either terms of cause and effect.

The concept of causality requires non-constitutive relations or logical independence. The latter facilitates material dependence: because things are logically independent, they can change each other (Hibberd, 2011, p. 146).

According to Anderson finding regularities in the natural and social domains is difficult because of interaction at all points. No singular event or thing needs to have a particular effect, and usually more than one thing/event cause one or more than one effect. Thus, the idea of a singular cause is wrong.

The causal field is an important concept (Hibberd, 2011, p. 148). It implies a context within which events takes place. If the context changes, so can the cause and even the effect(s). The implications ought to be clear: both natural and social domains are subjected to the causal field

---

Now if constructionists (or others) are of the opinion that we cannot sometimes discover what is the case, I have two suggestions: (i) they find two words other than 'knowledge' and 'fact' to refer to whatever is, on their view, socially produced, and (ii) they apply their opinion consistently and acknowledge that in their own research into the social factors affecting the research process, they are not sometimes discovering what is the case, and that we are none the wiser about these factors than we were 2,500 years ago!" (Hibberd, 2005, p. 111).

5.4.8 Argument

Anderson's unitary view of being makes no distinction between realms such as the natural and the social. This assertion follows from the fact that there is nothing but situations, and underlying the situational context is a particular view what being is: things exist or not. Thus, even logic is not seen as an a priori system but as ontological. According to Hibberd (2011, pp. 129, 131), Anderson's view of logic is pre-Socratic and definitely neither Russelian nor logical-positivistic. Reality boils down to the four basic logical statements. These statements are not abstract but grounded in being—logic is ontological[188]: *"… we are always tacitly committed to one of the four logical forms—all S are P; some S are P; no S are P, and some S are not P—each of which is situational"* (Hibberd, 2011, p. 129).

The concept of a proposition is also related to Anderson's view of truth. He rejects a correspondence theory of truth because a proposition happens to express a state of affairs directly that can be contested. He avoids the issue of language as a *tertium quid* or medium referring to a state of affairs (Hibberd, 2011, p. 133). According to Hibberd (2011, p. 135), Anderson's view is closer to an identity theory of truth.

The fact that a proposition expresses a state of affairs or situation and opens up the opportunity for someone to disagree, underlies the possibility of argument, narrative or theory. Logic being ontological and expressing a range of state of affairs, allows assertions and counter assertions and, hence, critical argument.

The implication is that levels of reality and methods, such as those adapted for ideographic and nomothetic domains, do not have legitimacy or in principle need not differ. The Heraclitean process metaphysics applies here as well: *"there is no distinction between discourse and existence or occurrence–there is only one way of being"* (Hibberd, 2011, p. 128). Consequently, discourse is a spatiotemporal event and even its content is about something *"distinct and connected,"* spatiotemporal and complex. Herein lies the root of critical enquiry and debate. Criticism is much more than merely affirming the opposite of a claim. It is showing what is illogical but also suggesting alternatives, i.e. it is constructive (Hibberd, 2011, p. 141). Put in another way, criticism and critical enquiry is, of course, saying that x cannot be the case but also points to finding out what should be the case.

---

[188] *"Anderson's logic-as-ontology thesis speaks directly to the quantitative–qualitative debate in the social sciences. Mainstream psychology endorses the quantitative imperative and largely excludes qualitative research, but these commitments are not expressions of logical positivism because there is no conceptual link between such commitments and logical positivist philosophy (Michell, 1997, 2003)"* (Hibberd, 2011, p. 130).

5.4.9   Truth

I need to make a few brief remarks about Anderson's view of truth. It is never explicitly discussed but can be stated simply as a literal concept of truth (Michell, 2005, p. 286). If one makes an assertion "John is heavy," the subject, predicate and copula states a matter of fact or is a proposition claiming a state of affairs about a situation taking place at a point in space and time. Anderson shies away from a correspondence theory of truth because it involves the issue of representation: making statements correspond to the way things are. The problem with representation is that it involves an infinite regress that logical positivists tried to solve with correspondence rules. The question can always be asked how we can know that the representation is an accurate reflection of what is. The answer merely defers the issue to another level of representation and so on ad infinitum. Although it is probably an inelegant solution, a literal view of truth says even though my claims can be contested, I assume it to be about something in space and time. The issue is not so much about language but about the contents of the claim (I assume claims can be made in other ways, pictorially, for instance, and still be regarded as a proposition in Anderson's sense). Of course, the claim is expressed by Anderson's proposition, a handy but confusing manner—because the positivists talk about *"protocol sätze"* or propositions—to refer to claims made about reality.

5.4.10   Meaning

One of the main post-modern complaints against science is its inability to deal with meaning (Lock & Strong, 2010). I agree that a scientistic[189] view of science has

---

[189] With scientism I would like to refer to incorrect image of science that both natural and human/social scientists have. It is the same image against which constructionists rant.

Scientism refers to the image of science resulting from how constructionists and some realists construe science. If I see another student categorising quantitative empirical research as positivist and quote Terre Blanche et al. (2006), I will have a massive heart attack! The point is that the straw man strategy or fallacy were used by some proponents on the relativist side and even accused realists of using the same strategy: "*Since the positivist proposal for a unified science of nature and society is premised upon empiricism, these questions have to be considered afresh, on the basis of alternative views of the nature of science. This has been the basis of the extended and misguided criticism of empirical and, particularly, forms of quantitative research as positivist*" (Scott & Marshall, 2009). However, textbook examples of perpetuating the myth of science as positivism can also be found. Listen to how Neuman (2012, pp. 47-48), despite the good points of his introductory methods text, characterises mainstream empirical research:

Positivism is the most widely practiced social science approach, especially in North America. Positivism sees social science research as fundamentally the same as natural science research; it assumes that social reality is comprised of objective facts. Value-free researchers can precisely measure and use statistics with the objective facts to test causal theories … Positivists emphasize the principle of replication… the positivist approach is deductive and nomothetic … Most positivist studies are quantitative, Positivists see the experiment as the ideal way to do research.

Positivism is thus "*A term that, through overuse and misuse, has become an almost meaningless term of abuse that can be applied to almost any kind of empirical research that appears not to pay sufficient attention to the complexity of social meanings. In fact, the term has a quite specific and much narrower meaning and should be used only in this sense*" (Scott & Marshall, 2009).

136

difficulty dealing with meaning when one refers to science as entailing traditional positivistic assumptions. The issue of meaning was traditionally dealt with by Dilthey's ideographic/nomothetic distinction. Within those "subjectivist" sciences (such as psychology), the assumption is that it must be able to deal with meaning, but as the development from Wundt to Lacan shows, the concept of meaning concurrently with the endeavour to be a science does not always congeal sufficiently. The qualitative-quantitative distinction in social and related sciences is symptomatic of the difficulty dealing with meaning within empirical and quantified contexts (Maze, 1983, p. 105). Clearly, meaning cannot be measured in situations where persons speak about phenomenological experiences. The qualitative feel of situations and experience cannot be expressed in numbers, even more so when aggregated across large groups. However, we can verbally express those meaningful experiential feelings verbally (as any good novel shows). Against aggregation and numerical description, qualitative approaches utilise language to express the unique and subjective. Although it is largely based on a misunderstanding, in my opinion, about the nature of quantification modelled on the physical sciences, the consequent constructionist and subjectivist development of qualitative methods complicated the matter even further. The complication is rooted in yet another dualism that has both an epistemological and ontological basis.

Situational Realism integrates the idea of meaning into science, views meaning as relational and therefore squarely within the domain of psychological science (Petocz, 2011).[190] The now familiar *xRy* is also applicable in this context: somebody (x) assigns meaning (R) to something (y). In the typical current understanding of meaning someone like Gadamer (2004) views the original intention of the author as not sufficient for understanding the text. Understanding text, thus finding meaning, can be characterised as a fusion of horizons: the tradition accompanying the text, as well as the reader's current context and prejudices, fuse to facilitate understanding (Linge, 1977, p. xxvi). This process is possible because of *wirkungsgeschichtliches Bewußtsein* (Gadamer, 2004, p. 301). Consequently, depending on who reads the text, interpretation would differ: "*The variety of performances or interpretations are not simply*

The positivist approach is then contrasted with the interpretative approach. Do these method textbook authors never engage with recent developments in the philosophy of science? This characterisation of science and positivism is unreflectively blended which makes a caricature of both. As the debate between Parker and Edwards illustrate the matter is not straightforward and rhetoric plays an important role in discrediting the other's position.

[190] "*The resulting tensions—ranging from uneasy alliance to radical schism— between 'science' on the one hand and 'meaning' on the other are reflected in practice in the clashes between putatively scientific and evidence-based treatments, usually behavioural or cognitive-behavioural, and enshrined in the scientist-practitioner model, and the more humanistic and psychodynamically-oriented approaches, which employ interpretative techniques to address the 'subjective meanings' and 'lived experiences' held to be central in the psychotherapeutic or psychoanalytic encounter*" (Petocz, 2011, pp.700-701).

subjective variations of a meaning locked in subjectivity, but belong instead to the ontological possibility of the work" (Linge, 1977, p. xxvi).

Gadamer's philosophy has important implications for science. He explicitly points out that interpretation, or rather understanding, is not a matter of method.[191] No method can guarantee understanding. It is rather episodic and trans-subjective. In the first instance, the text and interpreter forms part of the process of tradition in which a particular act of understanding is a moment in the process, thus, episodic. It is trans-subjective; accordingly, the understanding that takes place is an event beyond the individual interpreter. The coming together of different horizons or contexts forms new meaning, and this is beyond the control of the individual interpreter, hence, trans-subjective. This process of understanding of meaning and language is essentially one and the same for Gadamer: "*Word and subject matter, language and reality, are inseparable, and the limits of our understanding coincide with the limits of our common language*" (Linge, 1977, p. xxviii).

This current understanding of hermeneutics of which Gadamer is taken as an example, can be compared to a realist understanding of meaning. Meaning has been colonized by hermeneutic, constructionist and postmodern approaches in psychology. The reason is that empiricist psychology did not pay much attention to the issue of meaning over time. I think the reason is valid, but these approaches incorrectly assume that psychological science of the non-postmodernist variety cannot deal adequately with meaning (Mackay, 2003, p. 364).

Petocz (2011) distinguishes between two types of meaning: (a) linguistic/symbolic and (b) experiential. The first linguistic/symbolic sense is where words, symbols and related things stand for other things.[192] Language is understood as a subset of a larger symbol system that can be formal or informal, that refers to things and by virtue of this references means something. When a claim is made by means of language as a proposition, then it expresses a state of affairs, i.e. making a truth claim (Mackay, 2003, p. 366). The second type is "*experiential meaning as motivational salience*" (Mackay, 2003, p. 366). With "*motivational*" Mackay (2003, p.

---

[191] "*Gadamer's principal contribution to hermeneutics is to be found in his concerted effort to shift the focus of discussion away from techniques and methods of interpretation, all of which assume understanding to be a deliberate product of self-conscious reflection, to the clarification of understanding as an event that in its very nature is episodic and trans-subjective. It is episodic in the sense that every particular 'act' of understanding is a moment in the life of tradition itself, of which interpreter and text are subordinate parts. It is trans-subjective in that what takes place in understanding is a mediation and transformation of past and present that transcends the knower's manipulative control*" (Gadamer, 1977, p. xxviii).

[192] Linguistic meaning is expressed by semantic theories of meaning (Lewis, 1970; Speaks, 2014). In these theories issues of reference and representation are considered, but not syntactical issues, although the relationship between syntax and meaning is an important one. The second type of meaning theory is what Speaks (2014) calls foundational theories that consider the facts that explain how meaning is attached to language, Examples are mentalist and non-mentalist theories.

138

366) refers to the psychological structure of people, namely, beliefs and desires about things.[193] Something does not have motivational salience just because it means something in the first symbolic sense: it should have a particular salience in a person's motivational makeup. We can distinguish between the two types as follows. (a) Symbolic meaning: a chair or any depiction of a chair means a way to support Peter's bum to Peter, or briefly, x means y to a. (b) Experiential meaning: Peter experiences his mother's death as traumatic, or briefly, x means y to a. To hammer the point home: if the chair has a particular semantic salience, it does not necessarily have experiential salience. However, if Peter's daughter got hurt when the chair broke, then x has both symbolic and experiential meaning for Peter.

In symbolic meaning a three-way relationship is required, namely, the signifier, the signified and someone who grasps that the signifier stands for the signified. It is important to realise that meaning is not a thing, cannot be reduced to any of the terms of the relationship, and cannot be intrinsic (to any of the terms). The fact that we localise meaning within the relationship between the terms cannot relativise meaning; it is this relativisation that *"launches"* constructivism and anti-realism (Petocz, 2011, p. 709). Meaning is first of all, not a property of objects; it does not form part of a mind-independent reality (recall the discussion of properties and relations in Semi-Realism above). Also, Mackay (2003, p. 367) points out that it is actually irrelevant how the experientially meaningful relation is constituted, namely, by means of things getting meaning from context, history, tradition, constructed by communities, formed by discourse or personal stories, and so on. As long as we know that experiential meaning is a thing's motivational salience, then we localise meaning within the relationship between people and things (the latter include events and processes). We need to realise that x means y to p in a particular context is just as objective and real as any other fact.[194] The three-termed relationship is there and, consequently, within the domain of an investigative science.

---

[193] Mackay (2003, p. 367) believes that both cognitive and conative aspects are required to explain behaviour: *"… cognitions (beliefs, constructions, schemas, etc.) and motives (desires, wants, needs, wishes, etc.) always operate together: beliefs without related desires lead to nothing; desires without related beliefs imply no action."* The need for a holistic view of psychological structure becomes glaringly obvious in psychology's historical development: *"Even the most casual examination of the impulse to make sense of events must surely prompt the question: why do humans want to make sense of things? And from this it follows that the process is for something that presumably has an evolutionary function. The neglect of motivational theory in the wake of the cognitive turn is a major gap in psychology"* (Mackay, 2003, p. 368).

[194] This move from SiR might be seen as a classical empiricist manoeuvre. Kerlinger and Lee (2000) in his classical psychological methodology text says the following when discussing the three criteria for a problem formulation in the social sciences: *"One, the problem should express a relation between two or more variables … Two, the problem should be stated … in question form … third … the problem must imply possibilities of empirical testing. A problem that does not contain implications for testing its stated relation(s) is not a scientific problem. This means not only that an actual relation is stated, but also that the variables of the relation*

How does this accord with what Gadamer and constructionists' say about meaning? Both realists and interpretivists say that meaning does not adhere within objects; both say that meaning cannot be stable, singular and truthful across individuals, history and contexts. Each event of interpretation is a new one: people, groups and cultures understand things differently. So far so good, because the two terms, *x* and *y,* are independent from *R* and each other. However, Gadamer understands interpretation as constituting a new reality as if meaning is eventually fused with objects (and texts). This cannot happen because reality (*y*) is then dependent on *xR*. When Gadamer talks about the fusion of horizons it seems to imply that meaning inheres in the past and the current situation of the interpreter, and when they fuse, new understanding takes place. Thus, meaning, albeit different, is a property of the original text and its tradition, and of the interpreter. These different properties fuse to form something with new meaning. Can this be a correct understanding of Gadamer? If so, then clearly it is not a realist conception of meaning: meaning cannot inhere in things and these things cannot constitute a separate or second/third world of meaningful objects. If, however, Gadamer sought to account for the dynamic process taking place when one understands something as meaningful by incorporating new and old information, then what we have is a foundational theory of meaning, which is fine, but one in the mentalist camp, which is not fine.

The realist acknowledges the cognitive/constructivist nature of critical enquiry: it is fallible, thus, provisional, and cannot claim absolute truth. Realism acknowledges that we work in a reality consisting of relations, thus, some of us enquire about these relations and others focus on the terms. We also know that meaning cannot be measured but this does not mean the psychologist as scientist cannot scientifically investigate what things mean to people and why (Petocz, 2011)!

5.4.11   *Distinguishing Anderson's realism from positivism*

It is crucial to point out Anderson's difference from positivism because he can easily be characterised as positivist based on what and how he states his philosophy. His strong allegiance to empiricism can be mistaken for positivism, as well as his usage of terms such as "proposition." Even his insistence on a singular way of being that nullifies an ontological distinction between natural and social science can be mistaken for positivism's call for unification of method for all science.

(a)   Logicality: In discussing Anderson's brand of realism, Hibberd (2010) points out that even if, for instance, both Situational Realism and positivism has logicality as a premise, it should be made clear how it is understood in each position. To illustrate, logicality is fundamental to positivistic epistemology in so far as logical and mathematical propositions were deemed true and valid on aprioristic

can somehow be measured. Many interesting and important questions are not scientific questions simply because they are not amenable to testing."

grounds (Hibberd, 2005, p. 74).[195] Anderson, on the other hand, views logicality as ontologically fundamental: 2 + 1 equals 3 but never 4 in the same world! Some things cannot be similar: I cannot be a frog and my theory should be logically consistent, thus, logicality plays out on an ontological and epistemological level.

(b) Empiricism: Anderson's understanding of empiricism was also different. According to Hibberd (2010) his treatment refers to the classical Greek usage of *"finding out by trail and error"* although the Greek adverbs *εμπειρια* (empeiria) as well as *εμπειροσ* mean "to be experienced" or "skilled" in something (Liddell, Scott, Jones, McKenzie, & Barber, 1968). The point at issue is despite the difference between these two classical definitions, Anderson and the Greeks meant something different than what we understand under the term "empiricist" and its relationship with positivism. Current usage points to making observable reality the final arbiter of the truth of our theories. Hibberd (2010) makes the same point when defending Anderson's Situational Realism against accusations of positivism (ironically, from Critical Realists!) (Hartwig, 2007, p. 98). Branding Anderson as a positivist is probably based on a misunderstanding of what Anderson (1962j) meant by, amongst others, characterising his own approach as empiricist. Hibberd's (2010) claim is that Anderson's and a positivist understanding of empiricism is not the same. A lack of understanding the fundamental difference between realism and positivism leads to an unnecessary perpetuating of scientistic myth.

(c) Anderson rejects positivism's linguistic phenomenalism (Hibberd, 2011, p. 124). The analysis of language played a major role in logical positivism's concept of science as the verifiability principle attested to. The conflation of language and reality is a principle problem for Anderson.

5.5 Conclusion

A number of issues need to be lifted out and will become clear within the context of the discussion in the chapters to follow. Scientific Realism, namely, Semirealism and Minimal Realism, along with Situational Realism (which precedes the former by many decades), assumes causality as a category. This point has not yet been fully explored and will be addressed in subsequent chapters. However, it is important to note the principle at this stage: empiricism denies the reality of causality or necessity, realism does not.

---

[195] Hibberd (2005, pp. 74-75) provides a succinct distinction between 19th century positivism, logical positivism, logical empiricism as used in general constructionist literature. They are not same and different tenets apply despite some similarities between them. For example, upon dropping the verification principle, the logical positivists became known as the logical empiricists, which also largely coincided with the proponents' movement across the world.

The structuralism of Semirealism shows the importance and reality of relations. Situational Realism likewise establishes its importance for a realist theory but adds the aspect of the non-constitutive nature of relations. This follows from its anti-idealism and below the viability of one implication of idealism, namely, representationalism or mediated cognition against direct realism will be considered.

Minimal Realism's acceptance of causality underlying socio-economic reality is shown by its use of modelling and later on its relation to experimentation will be pointed out.

A substantial contribution of Situational Realism is its postulation of a single reality or in other words, an egalitarian ontology. The distinction between realities should be regarded as *modes* of reality and ontological pluralism needs to fall away: (Passmore, 1962, p. xxiii) summarises Anderson's realism well:

> *No total scheme, no simple units, no first principles, no ultimate objectives, no modes of being, no necessary truths—these, not the rejection of God, are the fundamental negations of Anderson's philosophy. To put it positively, there is, on his view, a single way of being: the complex activity of a spatio-temporal occurrence, within which discriminations can be made and which is itself discriminable within a wider system. To explain, to prove, is to draw attention to relationships which occur between such occurrences; to assert a proposition is to take something of a certain kind to occur; any proposition can be false; science proceeds by the critical examination of hypotheses; any objective has a variety of characteristics and it can always be pursued as part of a procedure for getting something else.*

CHAPTER 6 TRANSCENDENTAL IDEALISM

Kant's Copernican revolution in epistemology focuses on establishing how the world conforms to the mind and not as, in the case of Hume and other empiricists, how the mind conforms to the world. Why would Kant embark on a critique of pure reason? Kant reacts to Hume's scepticism on the possibility of metaphysical knowledge. The statement that Hume aroused him from his dogmatic slumbers is well known. However, the contextual circumstances that led to idealism, and specific German Idealism of which Kant was the first, was a cultural movement away from pre-modern authoritarian view of society to a modernist insistence on *"rational justification and freedom"* (Dudley, 2007, p. 2). Therefore, to obtain goals of freedom from authoritarian structures and move towards the authority of reason (an internalising movement away from external imposed authority), Kant had to move beyond Hume's scepticism.

Hume, as was seen above, said knowledge of only empirical matters is possible in so far as ideas and impressions can be reduced to sense experience. This left metaphysical matters in dire straits because knowledge of God, freedom, the self, substance, cause and so on cannot be validated experientially. The sceptical conclusion was that we have only a pragmatic principle for gaining (empirical) knowledge, namely, by means of induction. Induction cannot be justified and is a matter of habit. Induction implies that our inference for empirical knowledge could have been otherwise when confronted with a constant conjunction of events or objects. Empirical knowledge is thus not certain at all. The relation between ideas is the only form of knowledge that is certain and deductively demonstrated to be necessarily true. Thus, Hume's empiricism led him to deny free will because humans have no means to justify their knowledge and actions rationally. Habit and desires are the only motivators for human behaviour: *"Such a self is incapable of rational self-determination, and therefore incapable of fulfilling the modern aspirations to epistemological, moral and political autonomy"* (Dudley, 2007, p. 9).

Kant's response in his subsequent works was to (a) indicate the capabilities and limits of reason in order to answer Hume's scepticism regarding rationality, and (b) show that the one thing one cannot know was whether one is free. If this is the case then Hume is wrong to deny freedom and human beings can just as well act as if they were free (Dudley, 2007, p. 12).

6.1 A priori, a posteriori knowledge and analytic, synthetic judgements

Kant (1934, p. 25) distinguishes between a priori and a posteriori knowledge. A priori knowledge is knowledge that does not require experience. A famous example is the definition of bachelors as unmarried men. One can see, on the one hand, that the meaning of "unmarried" is contained in "bachelor" and one does not need

empirical experience to establish the definition as true.[196] On the other hand, the fact that bachelors do not wear socks can only be established by empirical experience. This knowledge is then a posteriori. Kant (1934, p. 26) provides two criteria to determine whether an expression is a priori or a posteriori, namely, universality and necessity. Only a priori judgements are strictly necessary and universal. Thus, the claim that bachelors do not wear socks, is a contingent fact that can only be established empirically and need not be universal or necessary. It might be found that some do wear socks, which means the fact is not necessary (if it was universal then it would have been necessary: all bachelors wear socks implies universality which means some cannot be excused from this behaviour—if they do wear socks the statement is contingent). In the same vein that bachelors are unmarried applies with strict necessity and universality.

Kant (1934, p. 30) also distinguishes between synthetic and analytic judgements. A judgement is a predicative statement, namely, x is y (Dudley, 2007, p. 16). Analytic judgments are those where y is contained in x as in the example of "bachelors are unmarried" above. With synthetic judgements the subject does not contain the predicate, which can only be established by means of experience. The two types of knowledge and the two types of judgments combine to form four types of knowledge, namely, analytic a priori and analytic a posteriori, and synthetic a priori and synthetic a posteriori. Analytic a priori and synthetic a posteriori are relatively unproblematic. The first do not depend on experience at all whilst the second only depends on experience.

Analytic a posteriori knowledge, i.e. knowledge derived from experience but expressed in a judgement where the predicate is contained in the subject, is impossible because if a statement is analytic then it does not require experience. Thus, one is left with synthetic a priori knowledge. This implies knowledge not derived from experience since it is a priori, but it is contained in a synthetic judgment, which means that the predicate is not contained in the subject. A synthetic judgement adds new knowledge because an analytical judgement is tautological and do not establish new knowledge. Usually, experiential knowledge, as we have seen above, adds new knowledge and therefore is synthetic a posteriori. It is clear that a synthetic judgement need not be experiential; it is possible that synthetic knowledge can be found and this is precisely what Kant wanted to indicate: whether synthetically a priori knowledge is possible.

---

[196] Although it is easy to explain a priori in this manner, it is actually an explanation of "analytic". Kant's (1934, p. 26) criteria of universality and necessity should be used here: even Dudley (2007, p. 16) made this mistake. See the remainder of the paragraph above.

6.2 The transcendental argument

Kant (1934, p. 35) asks how synthetic a priori knowledge is possible. Given that it exists, it should be possible and then one ought to be able to determine *how* it is possible. Kant (1934, pp. 33-34) found synthetic a priori knowledge in mathematics, natural science and assumes the nature of metaphysical knowledge is synthetic a priori. Of the first two he asks how mathematics and natural science are possible, because *"… as they do certainly exist, it may with propriety be asked, **how** they are possible— for that they must be possible, is shown by the fact of their really existing"* (Kant, 1934, pp. 35-36).[197] Some doubt exists regarding metaphysics as science due to its *"miserable progress"*[198] but Kant assumes it to be a natural disposition of the human mind to speculate so metaphysical questions will always be asked and knowledge sought so the transcendental question can apply to it as well (Kant, 1934, p. 36).

In order for Kant to restore metaphysics it must be shown that metaphysical knowledge is about the world, consequently, about empirical experience and it must be a priori because it must be necessary and universal (Dudley, 2007, p. 17). Thus, metaphysics must be able to tell us what the world should be like. Kant's critique of pure reason ought to be able to restore metaphysical knowledge by indicating the conditions of the possibility of experience. These conditions must be synthetic a priori (Dudley, 2007, p. 17), and if it is, then it is metaphysical, thereby, establishing the possibility of metaphysics as well.

Kant distinguishes between phenomena and noumena. This distinction between appearances and things-in-themselves has been understood as entailing two separate worlds. According to Dudley (2007, p. 17), Jacobi advocated this interpretation which had an enormous influence on the development of German Idealism. The main problem with this view is that how it is possible to speak of noumena which by definition cannot be experienced. The distinction of separate worlds does not seem justified. However, how does the distinction make metaphysics possible?

6.3 Experience and thought

Kant discussed the two different ways knowledge is given to us:[199] under the transcendental aesthetic and the transcendental analytic—the first refers to sense experience and the second to understanding. With regard to sense experience, Kant (1934, p. 41) indicated that objects are intuited by means of the senses which he calls sensibility. Sensibility is the way we receive objects; sensibility provides intuitions (or representations) (Kant, 1934, p. 62) and these are then thought. Thought

---

[197] Author's emphasis.

[198] Sounds very much like human and social sciences!

[199] *"… there are two sources of human knowledge … namely, sense and understanding"* (Kant, 1934, p. 40).

constructs concepts. The object of perception or empirical intuition is *the phenomenon*. The phenomenon has two characteristics, namely, its matter and form. The material is the part that responds to sensation and the form is those properties that are grouped under certain relations. The material aspect is only given a posteriori whilst the formal part resides a priori in the mind. Therefore, in order for objects to be perceived as objects the mind must contribute certain relations to the intuition. These two aspects are space and time (Kant, 1934, p. 77). Without them objects cannot be perceived as distinct from us or as objects.

Kant utilises two basic arguments that space and time exist as a priori elements in the mind. The first or transcendental argument assumes that geometry is synthetic a priori knowledge and infers that space is thus as well. However, the argument fails, according to some commentators, because the assumption that geometry is synthetic a priori is not true (Dudley, 2007, p. 20). However, the second argument entails the conclusion that neither the idea of space nor time can be inductively inferred from objects that appeared to me. Thus, these aspects must be a priori.

Concepts and intuitions formed the contents of knowledge. Kant (1934, p. 62) said that cognition,[200] i.e. knowledge requires both: *"Thoughts without content are void; intuitions without conceptions, blind."* The mind must make *"its conceptions sensuous"* and *"its intuitions intelligible"* in order for cognition to take place. We, therefore, have two basic operations of the mind, namely, understanding and sensibility. The implication is that almost all of our concepts of things in the world correspond to some sensuous object or, in other words, are derived from experience (cf. Dudley, 2007, p. 22). However, as should be clear, cognition involves some a priori aspects otherwise the object (for example, a telephone), cannot be thought at all.

6.4   The metaphysical and transcendental deductions

Kant uses two steps to indicate the possibility of experience based on a priori elements, namely, the metaphysical deduction and the transcendental deduction. In the metaphysical deduction he shows that the so-called categories are necessary for understanding and, thus, for thinking. In the transcendental deduction he shows that the categories are necessary for the experience of objects as well (Kant, 1934, p. 86). In the metaphysical deduction Kant shows that certain concepts are necessary to effect judgements. A judgment is an act of understanding: *"Now thought is cognition by means of conceptions. But conceptions, as predicates of possible judgements, relate to some representation of a yet undetermined object"* (Kant, 1934, p. 73). Thus, a statement such as "all ravens are black" is a judgement. Even though the judgement "some dogs are female" differ in content, Kant holds that all judgement can be categorised into four types: quantity, quality, relation and modality. Under each there are further three

---

[200] The term cognition refers to thinking.

particular types. For instance, under quantity one can make a distinction between universal, particular, and singular (cf. Kant, 1934, p. 74).

6.4.1   The categories

Each type utilises a priori concepts. These a priori concepts are called categories and Kant (1934, p. 79) identified 12 in all, arranged in the same four groups of quantity (unity, plurality, totality), quality (reality, negation, limitation), relation (substance/accident, cause/effect, reciprocal interaction) [201] and modality (possibility/impossibility, existence/nonexistence, necessity/contingence) (see footnote 204 below for a table with the categories). The point of these categories is that no judgement about concepts can be made without them and because they are a priori, they are not given in experience but precede experience. The assumption is that experience can only be possible when these categories are combined with intuitions. The task of the transcendental deduction is then to indicate the possibility of experience given the a priori categories so that synthetic a priori knowledge is possible (cf. Dudley, 2007, p. 23; Kant, 1934, p. 91).

6.4.2   Synthesis

In order to perceive objects in the sensory field (that Kant calls the "manifold"—this is the array of sensory data) over time, one is required to associate or connect the concepts of objects so that they are perceived as the same object. If this did not happen, loose standing representations of objects would exist and these would constantly be perceived as unconnected atoms of experience. How would the perceiver connect these over time? Kant's answer is that the subject has to have some capability of perceiving unity. This unity is given by a self-consciousness who has the ability to relate different impressions and is conscious that unity is achieved (cf. Kant, 1934, p. 95). The mind then perceives the sense data and synthesises this into concepts that can be understood: *"Synthetical unity of the manifold in intuitions, as given a priori, is therefore the foundation of the identity of apperception itself, which antecedes a priori all determinate thought"* (Kant, 1934, p. 95). For this, synthesis, the a priori categories are required (Kant, 1934, p. 100).

What was the outcome of the fact that synthetic a priori knowledge is possible? On the one hand, metaphysics is salvaged although Kant had to indicate the limits of human knowledge because the possibility of metaphysics does not imply unrestricted access of human knowledge to domains that in principle cannot be accessed. On the other hand, Hume was proved wrong because ideas or concepts need not strictly be reduced to sense experiences (Dudley, 2007, p. 24).

---

[201] See Dudley (2007, p. 23).

6.5   The role of mediating representations: the schemata

Because we have categories and objects the question is how the one is applied to the other in order to make the perception of an object possible. The problem can be stated otherwise: how is it possible that a so-called necessary thing—necessary in the sense that it allows experience of the object—so unlike the object or not part of the object form part of the object's final constitution as a concept in somebody's mind? Kant (1934, p. 117) said the representation of an object must be homogenous with the conception, *"the conception must contain that which is represented in the object to be subsumed under it."* With empirical concepts the features and properties can be identified with relative ease: a table is square, a plate round and these geometrical shapes can be identified as characteristics of the objects under consideration. However, with concepts of understanding, i.e. categories, it is not possible to bring, for instance, causality, in line with the perception of two events following each other. In this Hume was correct: no amount of perceiving constant conjunctions will reveal the idea of a causal connection. Yet, we ascribe causality to some events and not others, thus, how can this dissimilar (non-experiential versus experiential) aspect be congruent with the representation of objects or events?[202]

The way Kant (1962b, p. 117) solves this problem is to propose mediating representations which have something in common between concepts and intuitions. These representations are called schemata. Time or temporality, as was seen above, was the transcendental determination of sense experience that made it possible (Kant, 1934, p. 121). Kant (1934, p. 118) demonstrated that temporality underlies categories as well. Accordingly, in temporality a transcendental schema is found which allows this application of categories to experience.[203]

The schemata apply the categories to experience, but they do not provide synthetic a priori knowledge. In order to do this Kant showed by means of transcendental arguments how the twelve schemata provide necessary conditions for specific experiences. Twelve principles follow from these arguments.[204]

---

[202] *"A perceptual experience thus combines a sensory presentation with a singular judgment, and the question naturally arises how two such prima facie disparate items can be **unified**"* (Rosenberg, 2005, p. 142)

[203] *"Consequently, the categories, without schemata, are merely functions of the understanding for the production of conceptions, but do not represent any object"* (Kant, 1934, p. 122).

[204] Summary of Kant's tables. From Dudley (2007, p. 27).

	JUDGEMENTS	CATEGORIES	SCHEMATA	PRINCIPLES
Quantity				Axioms of intuition
	Universal	Totality	All (units)	
	Particular	Plurality	Some (units)	All intuitions are extensive magnitudes
	Singular	Unity	One (unit)	
Quality				Anticipations of perception
	Affirmative	Reality	Being	
	Negative	Negation	Non-being	All perceptions have intensive magnitudes
	Infinite	Limitation	Degree of being	
Relation				Analogies of experience
	Categorical	Substance/accident	Permanence/impermanence	Substance remains permanent

148

6.6 The postulates of empirical thinking

Kant (1934, pp. 165-166) provides three postulates which will be quoted here:

*"1. That which agree with the formal conditions (intuition and conception) of experience, is **possible.***

*2. That which coheres with the material conditions of experience (sensation), is **real.***

3. That whose coherence with the real is determined according to universal conditions of experience is (exists) necessary."

With the postulates Kant provides criteria for determining the a posteriori character of concepts. It is possible that one can transgress the limits of reason and think up entities that do not exist. Of course, such entities, objects or thoughts, according to Kant's criteria, cannot contribute to knowledge. Based on the three postulates one can still ask the following: *"Though my conception of a thing is in itself complete, I am still entitled to ask whether the object of it is merely possible or whether it is also real, or, if the latter, whether it is also necessary"* (Kant, 1934, p. 161).

First, the possibility, i.e. the conditions for something to actually exist, is specified as those residing in what we have discussed above for intuitions and concepts. Thus, if an object of thought has complied with these conditions (experience and concept), it being real is possible. Thus, concepts can indicate real possibilities—by real is meant empirical (Rosenberg, 2005, p. 235)—only when they comply to experience and intuition. Even if the concept contains no logical contradiction (Kant, 1934, p. 167), such as the case with fairy tales, its reality cannot be ascertained.[205] Kant (1934, p. 168) illustrated the reality of concepts by contrasting

Modality	Hypothetical	Cause/effect	Rule-governed succession	Events governed by cause-effect
	Disjunctive	Reciprocity	Rule-governed coexistence	Coexisting substances reciprocal
				Postulates of empirical thought
	Problematic	Possibility/impossibility	Conceivable existence in time	Agrees with conditions of intuition/conceptualization
	Assertoric	Existence/non-existence	Existence at some time	Agrees with material conditions of experience (sensation)
	Apodictic	Necessity/contingency	Existence at all times	Required by universal conditions of experience

[205] *"But when we fashion to ourselves new conceptions of substances, forces, action, and reaction, from the material presented to us by perception, without following the example of experience in their connection, we create mere chimeras, of the possibility of which we cannot discover any criterion, because we have not taken experience for our instructress, though we have borrowed the conceptions from her. Such fictitious conceptions derive their character of possibility not, like the categories, a priori, as conceptions which all experience depends, but only, a posteriori, as conceptions given by means of experience itself, and their possibility either be cognized a posteriori and empirically, or it cannot be cognized at all. A substance which is permanently present in space, yet without filling it (like that **tertium quid** between matter and the thinking subject which some have tried to introduce into metaphysics), or a peculiar fundamental power of the mind to intuiting the future by anticipation (instead of merely inferring from past and present events), or, finally, a power of the mind to place itself in community of thought with other men, however distant they may be—these are conceptions the possibility of which has no ground to rest upon. For they are not based upon experience and its known laws; and without experience, they are a merely arbitrary conjunction of thoughts,*

it with notions such as telepathy, ether, and prescience (see footnote 205 above). These concepts do not have real possibility: *"From the mere conception of a thing it is impossible to conclude its existence"* (Kant, 1934, p. 169). What, then, is the case with concepts such as substance and cause? It is clear that these concepts cannot be extracted from empirical objects or experiences.

The second postulate indicates that things that agree with the material conditions of experience are real (or actual). The formal conditions were indicated above—these were the conditions related to concept and experience. The material condition then is that something must be perceivable: *"The postulate concerning the cognition of the reality of things requires perception…"* (Kant, 1934, p. 169).[206] According to Kant, perception is always necessary for establishing the reality of things even if they are not immediately accessible to our senses. The example he uses is the effect of a magnetic field on iron fillings: we can have a conception of magnetic fields, it can also be relatively a priori, provided there is some effect to be perceived, thus, mediately (Kant, 1934, p. 169).

The third postulate *"… applies to material necessity in existence, and not to merely formal and logical necessity in the connection of conceptions"* (Kant, 1934, p. 172). The third postulate says that as soon as things that are real comply with the universal conditions of existence (namely, the formal and material conditions I referred to above), they exist necessarily. The first point to notice is that existence is conditional (cf. Kant, 1934, p. 173; Rosenberg, 2005, p. 236). Hence, nothing that is is determined or as Kant (1934, p. 173) puts it *"in mundo non datur fatum"* or *"in the world there is not fate"* which means that things, if there were something like fate, will happen *"no matter what"* (Rosenberg, 2005, p. 237). How does this accord with another principle that Kant (1934, p. 173) provides, namely, *"everything that happens is hypothetically necessary"*? This means that nothing happens by accident (Rosenberg, 2005, p. 236). If nothing happens by accident, i.e. it happens according to laws of nature, then how can natural necessity not end up as determinism?

6.7 Reason

The principles of pure understanding and the two intuitions are all that are metaphysically knowable. All other knowledge is a posteriori. Thus, there can be no

---

which, though containing no internal contradiction, has no claim to objective reality, neither, consequently, to the possibility of such an object as is thought in these conceptions. As far as concerns reality, it is self-evident that we cannot cogitate such a possibility **in concreto** without the aid of experience; because reality is concerned only with sensation, as the matter of experience, and not with the form of thought with which we can no doubt indulge in shaping fancies" (Kant, 1934, pp. 167-168).

[206] *"The postulate concerning the cognition of the reality of things requires perception, consequently conscious sensation, not indeed immediately, that is, of the object itself, whose existence is to be cognized but still that the object have some connection with a real perception, in accordance with the analogies of experience, which all kinds of real connection in experience"* (Kant, 1934, p. 169).

knowledge of anything apart from experience and of things-in-them-selves (Kant, 1934, p. 211). Consequently, in the third aspect that Kant discussed, namely, reason, its limits are investigated. We have looked at intuitions and understanding. Reason is understood as the ability to draw inferences (Kant, 1934, p. 217): *"reason may be distinguished from understanding as the **faculty of principles**"* (Kant, 1934, p. 211) and

> *Reason, therefore, never applies directly to experience, or to any sensuous object; its object is, on the contrary, the understanding, to the manifold cognition of which it gives a unity a priori by means of conceptions—a unity which may be called rational unity, and which is of a nature very different from that if the unity produced by understanding* (Kant, 1934, p. 213).

From this we can see that Kant regards reason as that faculty that brings unity or systematises in a similar way as understanding operates on intuitions and concepts. Reason operates with ideas, which are "concepts" not having their origin in experience (cf. Kant, 1934, p. 222 for an explication of the difference between ideas and other concepts).

A characteristic of reason is to ask for the conditions of claims or judgements. For example, if one holds the judgment that all fish are mortal, then this can be subsumed under "all living things are mortal," and so on (see Dudley, 2007, p. 28; Kant, 1934, p. 214). Although reason's natural propensity is towards finding final causes, it can yield to the transcendental illusion by asking about the conditions of things that cannot have such conditions (Kant, 1934, p. 209). Thus, it transgresses its boundaries. Kant calls those principles of reason that stays within the limits of possible experience, immanent, while those that transgress the boundaries, transcendent (cf. Kant, 1934, p. 226).[207] Kant indicated three things that fall in this category, namely, free will, God and the immortal soul. As Kant indicated, these are pure a priori concepts that do not derive from experience. They cannot contribute to our knowledge of the world. Even though we are aware that Reason leads us on these paths and that the concepts so derived, do not have the status of knowledge, we continually transgress these limits. Kant identified two versions of the transcendental illusion, namely, paralogisms and antinomies. The paralogisms are the result of the idea that the knowing subject is itself a substance. This idea is, of course, incorrect and leads to ideas of identity, indivisibility and the immortality of the soul (Dudley, 2007, p. 30).

---

[207] Transcendental principles are applied to empirical experience although they do not originate from experience. "Transcendent" is applied to concepts beyond experience, and in Kant's use, illegitimate. See Kant (1934, pp. 209-210).

151

6.7.1 Ideas as indication of theoretical concepts

Wartenberg (1992) made a case for viewing Kant's view of ideas and reason explicated above as applicable to philosophy of science. Ideas are the unifying factors derived from the manifold of empirical cognitions. Thus, it seems that ideas are the result of trying to find relations and order among the empirical knowledge components we have obtained (cf. Kant, 1934, p. 225).[208] These ideas can be called theoretical ideas or concepts which clarifies their function within scientific theorising (Wartenberg, 1992, p. 230). Above, the three logical and transcendental principles of reason have been stated, namely, genera, specification and affinity. From a discussion of the principle genera, which means that unity among ideas is created by way of always trying to find the higher level of genus for the species of concepts, Wartenberg (1992, p. 236) is adamant that Kant does not hold a mere instrumentalist view of this principle but one that accords with the general practice of science. An instrumentalist view would mean that Kant restricts the relationship established between ideas with the principle of genera to a logical view of the principle. If merely logical relationships hold then the unity (or system) created cannot contribute to knowledge because it remains a priori. For the three principles to contribute to the process of science it has to be more than a priori and requires a link to empirical knowledge. That is, if ideas reflecting unity mirrors theoretical organisation of theoretical and related concepts, then we need a link to experience.

In order to achieve this, Kant made a distinction between regulative reason and constitutive reason. The latter refers to reason's constitutive nature when dealing with experience: objects are constituted through a synthesis of intuitions and concepts by means of a priori categories, schemata and the like (cf. Wartenberg, 1992, p. 237). However, in the application of the genera principle regulative reason is used; regulative reason applies the principle—and it must be noted, it is the transcendental principle I am referring to and not the logical one alluded to above—to empirical phenomena in order to find the relations between the concepts about those phenomena (Wartenberg, 1992, p. 238). The distinction between logical and transcendental principles is important to keep in mind. Both the logical and transcendental principles are required for what Wartenberg (1992, p. 233) calls a *"completely adequate system of scientific knowledge."* The transcendental principles are wholly a priori, thus (synthetic a priori) knowledge provided by reason (cf. Wartenberg, 1992, p. 235), whilst the logical principles function heuristically and are provided by reason without assuming that it reflects empirical reality at all (Wartenberg, 1992, p. 234). However, in order to construct a theory regarding reality

---

[208] *"Finally, it is obvious, that there exists among the transcendental ideas a certain connection and unity, and that pure reason, by means of them, collects all cognitions into one system"* (Kant, 1934, p. 231).

(i.e., the empirical world) the logical principle needs to be embedded in the transcendental principle otherwise the explanatory theory would remain a chimera.

While the principle of genera is aimed at finding relations of general concepts under which more specific ones can be subsumed, the principle of specification is aimed at finding more detailed specifications. Thus, where the first finds the genus of species, the latter finds as yet undefined species for a genus. The two principles seem to be opposites and in the words of Wartenberg (1992, p. 240), *"All that is required is that we see a drive for unity and a drive for differentiation as both equally necessary to the development of a completely adequate system of scientific knowledge."* Wartenberg (1992) provides a good example of a logical and transcendental principle of genera, which not only shows how the principle of genera works, but also how the logical and transcendental are related. The logical principle entails the following advice of reason to itself: *"Develop a conceptual structure that will reduce the complexity of empirical knowledge by searching for generic concepts and laws of which known empirical concepts and laws will be specifications"* (Wartenberg, 1992, p. 234). The transcendental principle entails the following: *"Inner and outer nature have such regularity that the concepts that we use to describe them must be capable of unification into the highest status"* (Wartenberg, 1992, p. 235).

The principle of affinity indicates that concepts modify themselves gradually. Wartenberg (1992, p. 241) shows from Kant's discussion of how the view of the orbits of the planets moved from circular to elliptical orbits, that the last explained the data better. According to Wartenberg (1992, p. 241), Kant saw that regulative reason was necessary for the discovery of universal gravitation. This is quite an important claim because universal laws such as gravitation are a priori (of which the hallmark is universality and necessity). Thus, knowledge of universal laws is a priori, but this is not possible since we have seen that only the categories, schemata and the like provide a priori synthetic knowledge. How do we move from empirical experience of a constant conjunction to universal laws?

Kant said that nature is interrogated by reason *"rather than allowing nature to lead it by a string"* and as Wartenberg (1992, p. 242) correctly notes, this is a fundamentally different view of science we have hitherto encountered in the discussion of empiricism and positivism above. As we have seen empiricism reduces knowledge to the senses but views passive observation of regularities as the way to establish laws and scientific knowledge and

> *While experience—or, more precisely, experimentation—did play an important role in their scientific advances, the importance of experimentation for the legitimation of scientific theories requires an explicit acknowledgment of* **the role of ideas** Wartenberg (1992, p. 242)

This is because the ideas actually provide the scientist with specific instructions about what to look for when he turns to experience via experimentation. Experience without the guidance of ideas would be a rather passive affair in which the scientist merely accumulates observations made from nature. Kant's central point is that science is an activity in which reason takes an active role as the interrogator of nature. It assumes this role by generating ideas that specify the particular sorts of regularities that the scientist ought to look for by means of experimentation, Ideas allow scientists to anticipate regularities that they can then seek to produce by means of experiments. This view of scientific practice treats experimentation as **a crucial element** in science (Wartenberg, 1992, p. 243).

Thus regulative reason provides the transcendental principles for unifying ideas inferred from experience *and* they function as the interrogators of nature, i.e. forming the framework that can lead the scientist to ask specific questions.[209] Science proceeds with two tasks, namely, finding unifying concepts or laws and specifying constituents of phenomena (Wartenberg, 1992, p. 240). The logical principles are important guidelines for reason to hypothesize about unifying or differentiating phenomena that might exist, but the transcendental principles actually tell the scientist that the quest for unification or differentiation is not hypothetical: nature is this way and the scientist needs to test the theoretical ideas experimentally by interrogating nature. The scientist does not just record regularities but actively seeks them by experimentation (Wartenberg, 1992, p. 243); *"… Kant takes science to be an enterprise whose specific products attain validity by being tested against empirical data"* (Wartenberg, 1992, p. 244). This view of science is a step further than the empiricist view of science and in the following chapters we will see how close it is to a transcendental realist or critical realist view.

6.7.2   *Laws of nature*

As we have seen above, cause and effect is a category, which means that it is an a priori aspect making experience possible. Whereas Hume denied cause and effect as necessary because all that we have is constant conjunctions or invariances, Kant relocates cause/effect within the transcendental domain as a priori. Kant (1934, p. 148), in the second analogy, said that we perceive events or states consecutively, i.e. as one state following the other but he asks what it is that connects these states as one that precedes the other? It cannot be the reception of the sense data;[210] it cannot

---

[209] *"Now, although we must say of the transcendental conceptions of reason, **they are only ideas**, we must not, on this account, look upon them as superfluous and nugatory. For, although no object can be determined by them, they can be of great utility, unobserved and at the basis of the edifice of the understanding, as the canon for its extended and self-consistent exercise—a canon which, indeed, does not enable it to cognize more in an object than it would cognize by the help of its own conceptions, but which guides it more securely in its cognition"* (Kant, 1934, p. 227).

[210] Because it is only the mind that organizes the "manifold" of raw data as successive. Cf. Kant (1934, p. 149).

be the perception of time because it is not perceivable and it (successiveness) cannot reside within the object so it must the result of the imagination by virtue of the category of cause and effect (Kant, 1934, pp. 148-159). In Kant's (1934) own words:

> *It follows that it is only because we subject the sequence of phenomena, and consequently all changes to the law of causality, that experience itself, that is, empirical cognition of phenomena, becomes possible; and objects themselves, as objects of experience, are possible only by virtue of this law* (p. 149).

It is difficult to perceive (necessary) succession in an object that does not change (such as a house) even when looking at the house from top to bottom or left to right (Kant, 1934, p. 149). The sequence of perceptions can be in any order, but if something should happen to the house, such as a ball breaking a window, then the succession of events perceived can only be in a specific sequence.

Thus, we have perceptions of events/states/objects A and B following each other. In the case of successive representations where nothing changes, such as perceiving a house from side to side, the order of representations is not necessary. In the case of a ball breaking a window or in Kant's own example, a boat moving down a river, the sequence is not contingent but necessary because the order of events is not arbitrary. This shows that time in the sense of necessary order of events plays a role in perception necessary for successive events. Where does causality come into play?

One should distinguish between the universal law of causality and empirical instances of causality. The law is universal and necessary, hence, a priori, whilst the experience of empirical instances of the law (or particular laws) cannot be a priori. According to Friedman (1992) there are two standpoints about Kant's view of the relationship between particular and universal laws. Particular laws are those that are bound to particular empirical instances whilst the universal laws are those that exist a priori. The first view holds a strong separation between universal laws and particular laws. This implies that the necessity and universality of universal laws cannot be carried over to particular laws because the first are strictly a priori, and the second can only be known by experience. Consequently, where universal laws state that every event A will (necessarily) be followed by event B, particular laws can only be known inductively as contingent empirical regularities. No general applicability or necessity can be ascribed to particular empirical laws. This view, according to Friedman (1992, p. 164), has been endorsed by many commentators.

The second view, which Friedman (1992, p. 170) finds in Kant, proposes a relationship between universal and empirical laws. To claim that event A causes event

155

B means that there is a law stating that A events cause B events.[211] As we know by now we cannot claim universality or necessity from empirical experience. Particular laws are known only inductively by means of experience and universal/necessary laws strictly on an a priori basis. According to Friedman (1992, p. 173), Kant maintains that particular laws are subsumed under the universal laws and in this way get universal and necessary status (although they are only known in experience):

> *The rule of uniformity according to which illuminated bodies happen to become warm is at first merely empirical and inductive; if it is to count as a genuine law of nature, however, this same empirical uniformity must be subsumed under the a priori concept of causality, whereupon it then becomes necessary and strictly universal. It would appear, therefore, that the principle of causality makes experience possible precisely **by somehow injecting necessity (and thus strict universality) into particular causal laws** (Friedman, 1992, pp. 173-174).*[212]

Although it is clear that particular laws do have more than merely inductive status according to Kant, how this particular grounding operates is unclear (Friedman, 1992, p. 175). However, Friedman (1992, p. 176) referred to Kant's (1891) discussion of finding universal laws from an observation of the motion of the planets where the process of moving from inductive observations to universal laws is made clear. The process follows largely the modal categories, namely, possibility, actuality and necessity.

As we have seen above these are reflected in the postulates discussed above. The first phase involves observation and recording of regularities. For instance, the motion of the planets is recorded by observing the phenomena and noting their relative paths. Then it is noted that the motion of the planets is reflected by Kepler's laws. These are examples of particular laws describing the apparent motion of planets being observed. These descriptions form part of the first phase under the category of possibility. The first postulate (see paragraph 6.6 above) describes how the category is implemented: it states *"That which agree with the formal conditions (intuition and conception) of experience, is possible"* (Kant, 1934, pp. 165-166). Thus, our observations of motion fall within the realm of experienceable events. The second phase subsumes

---

[211] *"By nature, in the empirical sense of the word, we understand the totality of phenomena connected, in respect of their existence, according to necessary rules, that is, laws. There are therefore certain laws (which are moreover a priori) which make nature possible; and all empirical laws can exist only by means of experience, and by virtue of those primitive laws through which experience itself becomes possible. The purpose of the analogies is therefore to represent to us the unity of nature in the connection of all phenomena under certain exponents, the only business of which is to express the relation of time (in so far as it contains all existence in itself) to the unity of apperception, which can exist in synthesis only according to rules. The combined expression of all is this: All phenomena exist in one nature, and must so exist, inasmuch as without this a priori unity, no unity of experience, and consequently no determination of objects in experience, is possible"* (Kant, 1934, p. 164).

[212] My emphasis.

the process under the category of actuality. Therefore, according to the second postulate[213] that which is real or actual is constituted by experience.

6.8   Summary and conclusion

Over and above the points below, the most important aspect in Kant's philosophy is the consideration of necessity making experience possible. Kant's view is essentially a subject-sided view of the categories making cognition possible: the mind is structured in order to know reality. However, after Bhaskar's realism is discussed the difference and commonalities between Bhaskar's and Kant's use of transcendental arguments will be discussed.

(a)   Kant's transcendental method asks about the conditions of existence of something in the light of its existence.

(b)   His concern is with the conditions or possibility of synthetic a priori knowledge.

(c)   Knowledge is given by the senses or experience. The object of the senses is the phenomenon, which can be known; noumena cannot be known.

(d)   The phenomenon consists of matter and form. Matter is accessible through the senses, whilst form is only given a priori. Form consists of the categories, such as space, time cause and effect and so on.

(e)   The metaphysical deduction shows that the categories are required for thinking, whilst the transcendental deduction shows that the categories are required for the experience of things.

(f)   On the one hand metaphysics is salvaged although Kant had to indicate the limits of human knowledge because, the possibility of metaphysics does not imply unrestricted access of human knowledge to domains that in principle cannot be accessed. On the other hand, Hume was proved wrong because ideas or concepts need not strictly be reduced to sense experiences.

(g)   The reality of concepts does not depend on the possibility of thinking about them. Only intuition and (sensuous) experience guarantee existence.

---

[213] The second and third postulates are: *"2. That which coheres with the material conditions of experience (sensation), is real. 3. That whose coherence with the real is determined according to universal conditions of experience is (exists) necessary"* (Kant, 1934, p. 166).

157

CHAPTER 7 TRANSCENDENTAL REALISM

7.1 Introduction

In the following two chapters the Critical Realism of Roy Bhaskar will be discussed. He initially labelled his view of natural science as Transcendental Realism, a usage I will follow in this chapter, in contrast to Kant's Transcendental Idealism. The label Critical Realism was mainly used for his views of realism in social science but later stuck for his views of both natural and social science. The first section will deal with his theory for natural science which will be followed by a discussion of his human [214] and social science [215] views. The first section will largely follow the argument in his (1975) "*A realist theory of science*" (RTS) whilst the second will follow his (1998) views on social sciences in "*The possibility of naturalism*" (PN). In reaction to criticism of his work, Bhaskar (1998, p. 168) clarified his focus in both RTS and PN. His discussion of natural science took chemistry and physics as examples of experimental science well realising that non-experimental approaches in natural science carry just as much weight and import as scientific practices. An important reason for this focus is that positivism incorporated these experimental sciences as examples *par excellence* of science and Bhaskar's polemics are aimed at the positivist view of science and the constructions of science it spawned. The basic tenets of a transcendental realist view are then applied in a social science context in PN for the same reason: positivism's image of science—which is a caricature according to Transcendental Realism—ruled supreme in those social sciences trying to model themselves on natural science but also in the anti-naturalist reactions such as hermeneutics. Anti-naturalism, thus, took this caricature of science as the model of natural science and their "correctives" were in effect misplaced and misguided. Bhaskar's task in PN is to unmask these faulty correctives in those anti-naturalist philosophical positions that inform social science while retaining their valuable contributions. The same applies to positivism.

Bhaskar's motivation for realism in natural science is based on a transcendental argument of the form, *what must the case be for x to be possible*? In this instance, the question is what are the conditions for science to be possible? Of course, the fact that science is possible and practised lends some credibility to whatever answer one provides regarding the conditions for science, but it is Bhaskar's contention that the world must be a particular way and not another in order for science to be possible. Thus, realism in Bhaskar's eyes is the only viable philosophical position for science as practised. The need for a philosophical as opposed to a scientific position on

---

[214] Or humanities which is the study of literature, languages, philosophy and history (Mautner, 2000).

[215] Social science refers to the study of society and individuals. Subjects are economics, history, political science, psychology, anthropology, and sociology (Anderson, 2004).

science lies precisely in determining the conditions for scientific practise. Can science reflect on its own conditions? Probably, but then it moves into philosophy because science is concerned with its content, viz., uncovering deeper structures underlying the whimsical level of observable events. A realist or as Bhaskar (1975) terms it initially, a transcendental realist,[216] position on science, is the only position as opposed to positivism and Transcendental Idealism that provides a valid and full account of scientific practise and how the world must be in order to accommodate science.

The process of science consists in finding invariances, providing explanatory models for these invariances and then establishing the reality of these proposed mechanisms. In order to ground this model Bhaskar elucidates a particular view of experimentation in science. We will see that this model is crucial for what follows because its exposition exposes the process of science as well as the structure of the world. It will be seen that the world is intransitive,[217] structured and stratified. It will also be seen that the interpretation of experiments has consequences for how we ought to view the second stage in the scientific process, namely model-building. Both Transcendental Realism and Transcendental Idealism pose hypothetical entities to explain what was observed but only Transcendental Realism moves towards establishing their reality. At the stage of providing explanations we find that our theories are fallible and fundamentally corrigible. This so-called transitive[218] domain of scientific practise will also be discussed below.

In the end it will become clear that positivism and other variants of empiricism provide a misrepresentation of scientific practise but also cannot adequately provide and ontological basis for science—the way the world is is caricatured and this caricature grossly misinforms models of science in social and human sciences. A philosophical view of social science will be discussed in the second part below.

7.2 Philosophy and science

7.2.1 The relation between philosophy and science

The first question one needs to ask is why it is necessary to have a philosophical view of science. As Bhaskar (1998, p. 4) asks: *"What is the relation between science and philosophy? Do they compete with one another or speak to different worlds?"* On both accounts the answer must be negative because philosophy stands in a special relationship to science. According to Bhaskar in the history of philosophy, before Kant, philosophy

---

[216] I will use the terms Transcendental Realism in the text because of its affinity and difference with Transcendental Idealism. The phrase Critical Realism has gradually replaced Bhaskar's own preference for Transcendental Realism.

[217] Described on page 122.

[218] Described on page 122.

and science were intimately intertwined. His contention is that it is only with Kant that science and philosophy were clearly demarcated: the proper relationship between science and philosophy should be a Kantian one without the idealist and individualist principles. In opposition to idealism it is fundamentally historical; to individualism, it is fundamentally social. Philosophy does not focus on the content of science (contrary to other opinions) (Bhaskar, 1998, p. 4); its method involves reason rather than the empirical, and its premises are based on social contingent facts, thus, it remains bound within the historical. In using the transcendental method, philosophy *"… can tell us that it is a condition of the possibility of scientific activities φ and ψ that the world is stratified and differentiated. But it cannot tell us **what** structures the world contains and **how** they differ"* (Bhaskar, 1998, p. 5). The details of what the structures, mechanism and the like are, are revealed by the work of the sciences themselves.

Philosophy and science cannot make infallible claims vis-à-vis knowledge; both their claims can be revised. The domain of transitive knowledge, which is fundamentally corrigible and fallible, will be discussed below. Science's knowledge claims fall in this domain, but it is likewise important to realise that philosophy's claims are also fallible. Although a mistake Kant made was to utilise the *content* of, for instance, Newtonian science for some of his philosophical arguments, in a sense, philosophy is dependent on knowledge produced by science (cf. Bhaskar, 1975, p. 7)? A strict demarcation cannot be possible, and some philosophical arguments need to take scientific knowledge into account, and in this sense, Kant's use of the science of the day is not only understandable but necessary. Bhaskar (1998, p. 8) believes that philosophy provides knowledge, like science, *"But it is knowledge of the necessary conditions for the production of knowledge—second-order knowledge … ."* The knowledge is of a conceptual nature and Bhaskar continues *"… it ought to be able to tell us something we did not already know: it ought to be able to surprise us."*

Bhaskar believes that the way philosophy (of science) posed the question in terms of legitimatizing science was wrong.[219] If you take the practice of science as starting point then one can respond in two ways: (a) viewing science as rational as opposed to mythic, pre-rational, pseudoscientific and the like and showing how its knowledge claims can be thus and not otherwise, i.e. it investigates the nature of our scientific knowledge claims. It is an explicit focus on epistemology. Implicitly it says that the world reflects this rational structure in order for it to yield such knowledge. (b) The second way of responding is not to make assumptions about neither the nature of the knowledge science provides us with, nor about the nature of the world within which science takes place; one should investigate the nature of both knowledge and the world. In fact, by starting with the transcendental question, viz. the conditions for the possibility of science, one asks about the nature of the world;

---

[219] I.e., instead of asking "how is science possible," rather pose the following question: "given that science is practiced, how should the world be?"

the investigation of the nature of knowledge of the world follows in its wake. The focus should, thus, ontological:

> *This programme not only yields new insight into the structure of scientific knowledge* (***the form it must take if it is to be knowledge of a world investigated by such activities***[220]), *but enables us to see that the tacit presupposition (of a closed world, completely described) on which the traditional problem of its rationality was hung is inconsistent with its very possibility* (Bhaskar, 1998, p. 8).

Philosophy, then, *sometimes* (Bhaskar, 1975, p. 10) does not only function as underlabourer for science but also as midwife (Bhaskar, 1975, p. 261). It shows that the world is structured and differentiated but leaves the details to the sciences themselves. What the structures are and how mechanisms operate, what strata there are, are left to the sciences (Bhaskar, 1975, p. 259). As we will see below, science has a taxonomic task, a task identified by the philosophy of science, but *what* descriptions of the world there are is left to the sciences.

7.2.2   *The mechanistic worldview*

Views of science are informed by contextual and socio-historical factors and these tend to be reflected in the various philosophies of science. The development of science since the 1600s has led to particular views of causation. The basic tenets of a mechanistic view of causation will be briefly discussed here because it plays an important role in Bhaskar's polemics against atomism in ontology and epistemology. It is Bhaskar's view that empirical realism underlying both the empiricism of positivism and Transcendental Idealism incorrectly restricts the application of laws to closed systems (which will be discussed in paragraph 7.3.3 below) The conditions for closure is based on a particular understanding of what action is. Bhaskar (1975, p. 79) notes that the classical paradigm of action involves *"a corpuscularian view of matter and a mechanical view of causality."* and implies that causes are efficient[221] and external. This paradigm precipitates three variants, viz., (a) a physical, (b) metaphysical and (c) an epistemological or positivistic model (Bhaskar, 1975, p. 79). The *physical* conception entails a view of corpuscles bumping into each other. Action involves transferring motion to other corpuscles. Cause is then external and consists of mechanical forces, i.e. transferring motion. The events we perceive are the result of these corpuscles pushing on each other. The *metaphysical* view, especially characteristic of 17th century epistemology, entailed a linear and uni-directional view of causation and a view of matter as inert and passive but mind as active (Bhaskar, 1975, p. 80). Thus, change in things and qualities are contributed by the mind.

---

[220] Emphasis mine.

[221] Referring to Aristotle.

The *epistemological* view of action (characteristic of positivism) involves the perception of independent atomistic *events* and not, as in the case of the physical conception, as atomistic and, therefore, rigid *corpuscles*. Causation is the perception of a constant conjunction of events and not involving an external cause impacting on a corpuscle (as in the physical interpretation). In fact, causation cannot be ascribed to constant conjunction by the positivist. According to Bhaskar (1975, p. 81), the epistemological view can be rendered intelligible from a phenomenalistic perspective, namely, that the world is (re)constructed from sense experience (that is itself atomistic) as consisting of atomistic and independent events. Interestingly, the concept of atomicity in the physical conception is one of size (the world consists of minute building blocks) whilst in the epistemological conception it is one of simplicity (knowledge consists of simple building blocks) (Bhaskar, 1975, p. 82).

Bhaskar (1975, p. 83) summarised the assumptions of the mechanical worldview

  (a)   Causation is external.

  (b)   Matter is passive and effects are immediate.

  (c)   Fundamental entities are atomistic.

  (d)   Entities do not have internal structure and complexity.

  (e)   Pre-formation and material continuity does not exist.

  (f)   Transformation and variety in nature are subjective.

These assumptions, it should be noted, militate against a realist interpretation of science. Within these assumptions lie the roots for a positivistic view of science. Consequently, the characteristics of mechanical explanation derived from Newton, were viewed[222] as the paradigm for scientific explanation and although we know that it has been replaced by the paradigm of modern physics, the latter influenced modern philosophical views (such as positivism) (Bhaskar, 1975, p. 86). Bhaskar views the success of Newtonian mechanical explanation involving causation and corpuscles as fundamental for mechanistic explanation. Consequently, mechanical explanation involved the fact that (a)[223] causes are external, such as, when one corpuscle bumps into another to make the second corpuscle move (action by contact). This also indicates that (b) matter is inert and requires something else externally to set it into motion. Of course, action is immediately apparent. The corpuscles are (c) *fundamental* atomistic entities, which, due to them being atomistic, have (d) no internal structure

---

[222] Bhaskar (1975, p. 86) refers to Helvetius and cronies.

[223] The numbering refers to the assumptions listed above.

or complexity. From this it follows that for epistemology the atomistic impressions (of events) we depend on in sense-perception should be simple and not divisible into yet smaller, hence, less simpler entities (for if they were divisible they would have been structured and not atomistic) (Bhaskar, 1975, p. 77). The perception of discrete events does not allow the preservation of continuity from the positivist epistemological perspective, i.e. the *concept* of material continuity plays no role in its epistemology (Bhaskar, 1975, p. 84):

> It is the absence of the notion of material continuity through change, as it is manifest in the epistemological variation of the classical paradigm, where it results in the generation of an ontology of atomistic and independent events, that underpins the idea of the contingency of the causal connection … (Bhaskar, 1975, p. 85).

Therefore, the mechanical paradigm inculcated the idea that a necessary connection between things and events cannot be established except by constant conjunction (Hume) of actual or possible events (empiricism). This is a crucial point in the argument for Critical Realism: how do we distinguish arbitrary events from necessary ones? As we shall see below, the three science philosophical species Bhaskar is dealing with, have different answers to this question, and in the end it provides one with the means of unmasking positivism for what it is.

As Bhaskar (1975, p. 89) says, Newtonian science's success in utilising mechanics in explaining a number of phenomena and its failure to account for action at a distance (namely, gravity) both account for the *"grip of positivistic epistemology."* The lack of explanatory mechanisms, the focus on actual/possible (atomistic) events and action as external (due to the corpuscularian mechanics) played into the hands of positivistic epistemology. Against the positivistic epistemology Bhaskar (1975, p. 90) finds evidence in our everyday language use that we learn about causality in a way that conflicts with the Humean conception, namely, not from habit and constant conjunctions, but intensionally and non-ostensively. Learning how to use transitive verbs such as pushing (away), pulling (to) and slamming a door (shut) does not happen by pointing to examples.[224] Slamming the door shut requires *understanding* the connection between agent and cause as a whole movement and not as isolated atomistic events conjoined in perception. It is thus necessary for philosophy to break free from the already superseded scientific world view of Newtonian mechanics (note the brief discussion on page 160 above) (see Bhaskar, 1975, p. 89).

---

[224] I do not follow Bhaskar (1975, p. 90) when he says that transitive verbs are learned non-ostensively; he does refer to research that Piaget did but still in what other way do we learn about pushing, pulling, slamming and knocking things over than by example? We learn that a door closes if someone or something closes it and how else by seeing doors close? The effect of shutting is incorporated in the action and not the verb! Bhaskar (1975, p. 90) himself says that inkbottles do not get knocked, they get knocked over.

7.2.3   *The transcendental argument*

The transcendental argument Bhaskar bases his philosophy of science on is similar to that of Kant's. Whereas Kant asked what the conditions for the possibility of knowledge are, Bhaskar (1975, p. 23) asks what the conditions for the possibility of science are: *"what must the world be like for science to be possible?"* The transcendental question can be posed in the form of *"what the case must be in order for φ to be possible?"* (Bhaskar, 1998, p. 5) One enquires into the conditions for the possibility of some prevailing fact, in this case, the fact that science exists as a (social) phenomenon and is practised (Bhaskar, 1975, p. 36). Because science is a given there must be conditions that enable its practise. The conditions cannot lie with knowledge or the nature of knowledge because knowledge follows from the practise of knowledge-generating activities. Accordingly, we cannot make assumptions about the nature of knowledge and state that reality or ontology should conform to our structures of knowledge. Hume is a good example: his epistemology restricts his view of reality to that of a constant conjunction of events.

Kant's transcendental question, namely, how knowledge is possible, or specifically, what the limits of empirical knowledge are, leads to a distinction between noumena and phenomena. Noumena are fundamentally unknown. It can be seen that proceeding from the nature of knowledge, as in the case of Kant, the ontological is determined. [225] This is the basis of the *epistemic fallacy* (Bhaskar, 1975, p. 36): epistemological conditions cannot determine the nature of the real, especially—and here Kant[226] was correct—in the light of the limits of knowledge.

The question, though, is how can we interrogate this problem philosophically because the act of asking a transcendental question presupposes an epistemology, i.e. of how is knowledge of the real possible? Bhaskar (1998, p. 5) acknowledges the historical and social nature of philosophical investigation. These investigations are therefore transient and contingent, and thus corrigible; in this sense the precarious relationship between epistemology and ontology is acknowledged, namely, that how we conceptualise something (in this case, nature) to be can always be otherwise. However, the fact that philosophical investigation is done by humans ought to show us that it is both conceptual and material, i.e. people are material beings that think and do things—thus, their conceptual abilities need not be restricted to perceptual experience or idealist constructions, it might just as well be transcendental realist (cf. Bhaskar, 1998, p. 5).

Philosophy can therefore

---

[225] By limiting knowledge to what is empirically available, he postulates a domain that cannot be known, thus, epistemology determines ontology!

[226] He was correct that knowledge has limits.

*… tell us that it is a condition of the possibility of scientific activities φ and ψ that the world is stratified and differentiated, X and Y. But it cannot tell **what** structures the world contains and **how** they differ. These are entirely matters for substantive scientific investigation* (Bhaskar, 1998, p. 5).

In order to avoid placing limiting conditions [227] on the world [228] or the ontological, one should rather ask what the world must be like in order to make science possible. It is the world that science studies, and the fact that it is practised shows that the world must have a certain nature. The validity of the transcendental argument, i.e. presupposing certain premises in order for the consequent to be true can only hold within a certain context, namely, within or against a particular philosophical position. In this instance, Transcendental Realism is demonstrated to be the best answer to the question of the nature of world given the practice of science—this is the positive part of the demonstration (Bhaskar, 1998, p. 6); the negative part is showing that other philosophical positions, such as positivism and hermeneutics, cannot in part or totally sustain the practice of science (Bhaskar, 1998, pp. 6, 160).

Bhaskar's (1975, 1998) demonstration starts from an aspect that is crucial to some sciences and which is generally regarded as the hallmark of science, namely, experimentation. Experimentation speaks to the practice of science and not to its so-called image in the eye of the philosophers and science theorists. The second aspect he considers is the progress of science.

7.3 Critical Realism in natural science

Bhaskar (1975, p. 8) said that his aim for writing *"A realist theory of science"* (RTS) was, among other things, to counter the hold positivism had on the perception of what counts as science. He reflects on two movements in science, the one emphasising science as a social activity and the other viewing science as metaphor, but would like to combine these two strands in his Critical Realism. The first movement reacts against positivism's *monistic* view of development in science and Bhaskar mentions persons such as Bachelard, Feyerabend, Koyré, Kuhn, Lakatos, Laudan, Polanyi, Popper, Stegmüller[229] and Ravetz as representing this movement (Bhaskar, 1975, p. 9; 1986, p. 1).[230] The other movement is represented by persons such as Kneale, Hanson, Harré, Hesse, Scriven and Waismann. They emphasise the

---

[227] Limiting conditions could be epistemological, metaphysical or those constituted by a cognitive agent such a constructionist.

[228] I use ontology and world interchangeably.

[229] In his later phase.

[230] The collated lists in the two publications are presented.

use of metaphor in science against the positivist view of it having a deductivist structure (Bhaskar, 1975, p. 9; 1986, p. 1).[231]

Bhaskar positions his realist theory of science between this anti-monistic and – deductivistic views of science which means they form two crucial moments for understanding his views. The monistic view of science refers to positivism's understanding that scientific knowledge accumulates progressively. It is largely the effect of the epistemological view that knowledge and facts are based on observation and, consequently, the more claims are verified, the more facts are added to an already growing body of knowledge. Science develops in a singular manner, thus, monistically. This view does not leave room for real change. The possibility of scientific change is rooted in science as an activity executed socially: both its methods and knowledge are constructed in the social community of scientists—its objects, however, are not. Nonetheless, the emphasis on the social nature of science sets off an essential movement towards idealism[232] where reality and theories are creations of the human mind. This movement Bhaskar wants to counter with realism. How this takes place, along with avoiding the problems of the anti-deductivist movement, will be discussed later in this chapter.

Science as a deductivist system implies that its theories, explanations and predictions are structured deductively. The best-known example is the Hempel model of explanation referred to above (see page 76 and footnote 47), which deductively infers the behaviour of a phenomenon from initial conditions and a law. The second movement alluded to above, views science not to be formally structured and deductivistic, but utilising metaphor and models (Bhaskar, 1975, p. 9). However, according to Bhaskar (1986, p. 3) this movement, in their emphasis of postulating metaphor and models, do not have the ability to extract the attribution of necessity and universality from a neo-Kantian synthetic a priori contribution of the human mind. How this happens will be explicated below.

The problems the reactions of the two movements against positivism create can be solved by a Copernican revolution (Bhaskar, 1975, p. 9). However, Bhaskar (1986, p. 4) is quick to point out that it is not a Kantian "Copernican revolution" but one involving a radical (or fundamental) de-anthropocentrising of science. This is accomplished by proposing a new ontology thereby unseating

> … (wo)man in nature, in which the umbilical cord uniquely tying thought to things in traditional philosophy is snapped (the significance of discontinuism) and ontological

---

[231] Toulmin and Polanyi switched lists from Bhaskar (1986) and (1975) (which the first edition was published in 1975).

[232] Bhaskar (1986, pp. 1-2) speaks about "super-idealism."

structure, diversity and change emerge as conditions of the practical cognitive activity of science (the significance of non-deductivism) (Bhaskar, 1986, p. 4).

Thus, Bhaskar incorporates the criticism by the anti-monism/deductivism movements but avoids their anthropocentricism (of making the real dependent on knowledge, viz. committing the epistemic fallacy). Underlying both positivism and anti-positivist reactions are implicit (or explicit) ontologies and epistemologies. Positivism harbours an implicit empirical realism and anti-positivistic reactions in both natural and human/social sciences tend to inherit the effects of empirical realism in their views of natural science. Unmasking empirical realism as a wholly inadequate ontology for science provides one with the opportunity to establish a necessary corrective to both the ontological and epistemological (which Bhaskar calls the intransitive and intransitive) dimensions of science. The resultant Critical Realism espouses a simple yet deep principle: *"… perception gives us access to things and experimental activity access to structures that exist independently of us …"* (Bhaskar, 1975, p. 9).

7.3.1   The nature of the world

Three significant moments in Bhaskar's proposed ontology flow from the transcendental question: for science to be possible the world must be *intransitive, structured* and *differentiated*.

(a)   The world as intransitive or independent of persons constitutes realism and this means that the way the world is is not dependent on our knowledge of it.

(b)   Within the world as structured there are three domains that are ontologically distinct (Bhaskar, 1975, p. 13). These are the domains of the real, actual and empirical. In the domain of the empirical only (sense) experience applies. The domain of the actual is where events, actual and possible, can be experienced. The domain of the real is where independent mechanisms and structures underlie events. The empirical domain is a one-dimensional one where the positivist collapses all three levels of reality. According Bhaskar this boils down to a reduction to empirical experienceable events and things

(c)   Within the world as differentiated Bhaskar distinguishes between closed and open systems. Positivism presupposes the world as closed, whereas Bhaskar argues that the world is open and only rarely closed. It is only within closed systems that events point to laws.

What is the outcome, then, of comparing empiricism and CR with regard to the transcendental argument? By showing that the world is intransitive and structured (i.e., distinct from events), Bhaskar demonstrated the untenability of empirical realism, because according to him—and this is what we must examine—empirical realism conflates epistemology and being: it commits the *epistemic fallacy* by saying

167

that the events are the laws. Consequently, to hold that a constant conjunction of events indicates the law itself, implies an ontological unity between events and laws. More than that, because we discover knowledge by means of observation and experimental work, the observation of a constant conjunction is necessary for establishing the knowledge and the fact of a law.

7.3.2 *Transcendental analysis of perceptual experience and experimentation*

The transcendental question stimulates a transcendental analysis of the two paradigm-processes crucial to science, which supposedly give the scientist access to phenomena. The first is (a) perceptual or sense experience and the second (b) experimentation (Bhaskar, 1975, p. 31).

7.3.2.1 Perceptual experience

According to Bhaskar (1975, p. 31), sense experience can only make sense if one assumes the independence of the perceived object from the perceiver. Thus, asking about the intelligibility of sense-experience, given the nature of reality, is a transcendental question. Examining those reasons why it makes sense, given certain conditions, is a transcendental analysis.

If one assumes the independence of objects from our perceptual experience then it clarifies, in a sense, why people differ in their explanations of phenomena. The well-known story of blind persons each examining a different part of an elephant and describing their particular part as *the* elephant, is a good example not so much of constructionism, but of realism. Despite different interpretations there is *something* they are describing independent of them. One can take different examples of various interpretations of similar things, such as observing the world to be flat or curved, and realise that they are of *things* (or events): *"For Kepler to see the rim of the earth drop away, while Tycho Brahe watches the sun rise, we must suppose that there is something that they both see (in different ways)"* (Bhaskar, 1975, p. 31).

The second point to note is that if (scientific) criticism is to be possible, then perception must be of objects independent of us.[233] Criticism presupposes something to differ about, and in this case it is (a) different experiences about things and (b) changing experiences about things. We can only have changing experiences about things if they exist independently of us, thus, one can experience an enduring object differently on different times, persons can experience the same object differently than others, and we can experience changes in objects and events. Consequently, changing

---

[233] Note again the transcendental form of the question: criticism is of course possible because scientists and people in general engage in this activity; then given that it is, some condition needs to prevail, and in this instance it is intransitivity.

(or differing) experience enables the possibility of disagreement and therefore criticism.

Bhaskar (1975, p. 31) also contends that the necessity of scientific training presupposes the intransitivity or objectivity of objects. First of all, because things are not merely given to us in observation in all their clarity we need training to discover and uncover mechanisms in nature. Now, why should we need training if they are not independent of us and our abilities to know them? The argument is further bolstered by the observation that the world with its events and objects do not require humans to exist (Bhaskar, 1975, p. 32): one can easily imagine a world without people but not without things and events. Events take place without perceivers and therefore it is dangerous to claim that unperceived things and events do not exist or that that our knowledge of things constitute reality.

Scientific experience, which is present in the beliefs of empiricism, TI and CR, consists of sense perception and experimental activity or as Bhaskar (1975, p. 31) puts it, men as perceivers and causal agents. In his analysis of sense perception and experimental activity Bhaskar demonstrates the necessity of intransitivity and the structured nature of scientific objects (i.e., the world).

Sense perception requires the intransitivity of objects especially if change in those objects is to be perceived or when we are concerned with the interpretation of those objects. The argument is simply, in the first instance, that if an object changes over time and if we are to be able to perceive those changes, then the object cannot depend on our perception; it must be independent of what we see and can construct (otherwise change lies within our senses and constructions and that does not make sense when, for instance, looking at the twin towers intact one day and gone the next). Secondly, scientific criticism or interpretation would be impossible if objects were not independent of perceivers: two persons can look at the sun (or an elephant) and interpret its movement differently (i.e., as the results of a revolving planet or as a moving star). Both see something, and those objects must be independent from the perceivers.

7.3.2.2   Experimentation

The above analysis led to establishing intransitivity based on the intelligibility of perception. A transcendental analysis of experimentation further establishes intransitivity and structure (Bhaskar, 1975, p. 33). Let us assume that Tom, the schoolboy, would like to do an experiment to illustrate one of the laws of motion. He would like to illustrate the conservation of momentum and will use billiard balls to do this. He will show that momentum is conserved when one ball strikes another. This can be illustrated in an environment in which we can control the movement of one ball exactly and are able to make accurate measurements of the velocity of the balls. The law of conservation of linear momentum states that "…*the total momentum*

169

of an isolated system of bodies remain constant" (Giancoli, 1988, p. 192). This means that if one billiard ball strikes another their total momentum should be the same as before the strike or $m1v1 + m2v2 = m1v`1 + m2v`2$ (where m = mass, v = velocity and $m`$ and $v`$ equals mass and velocity after the collision).

It is clear that the conditions before executing this experiment must be strictly controlled because, if the balls are rolled on an irregular surface such as a carpet or gravel, momentum and direction of movement would be lost due to friction and other factors hindering smooth movement. Also, if the surface of the balls are sticky, as the case probably would be with Tom's balls who did the experiment after eating jam sandwiches for lunch, spilling jam on his shoes, cleaning it with his fingers, not washing his hands properly and then handling the balls, then the experiment would fail. Let us imagine two outcomes of the experiment (a) Tom successfully measured and determined the conservation of momentum and, (b) Tom did not find conservation of momentum in his experiment (a more likely situation given the state of his hands).

What can we infer from this brief illustration? Tom is responsible for setting up the experiment in such a way that the law can be exhibited in the events of ball A hitting ball B and both having the same momentum. Thus, *people* act as causal agents in experiments (Bhaskar, 1975, p. 33). Tom makes ball A move and measures the momentum in each case. Does this mean that he is responsible for bringing the law of momentum conservation about? Putting it another way, does the occurrence of situation (b) above imply that Tom annihilated the law? Intuitively, we know that this cannot be the case:[234] people as agents work towards establishing the conditions for the appearance of laws in particular events, but if the event did not show up as in Tom's experiment, then the law is not thereby ontologically annihilated; it probably was exercised but was prevented to be realised in events. We know that the law of gravity is been exercised all the time but only when I let go of the apple is gravity exhibited in terms of events. Thus, a distinction must be made between the factuality of a law and the events accompanying its realisation (Bhaskar, 1998, p. 9). Clearly, they are not one and the same although our access to the law is by means of events such as in situation (a) above.

If, for instance, outcome (a) is found a number of times when Tom or his friends do the same experiment, then one can say that a pattern of events have been reproduced by causal agents. Keeping in mind that a distinction must be made between the events or in this case, a regular or invariant pattern of events and the law they are a symptom of, what can one say about these events vis-à-vis other contingent events? According to Bhaskar (1998, p. 9) *"What is so special about the patterns they deliberately produce under meticulously controlled conditions in the laboratory is that it enables*

---

[234] Although we do not base our argument on intuition (see Bhaskar, 1998, p. 10).

them to identify the mode of operation of natural structures, mechanism or processes which they do not produce."

Laws are, therefore, ontologically distinct from a pattern of events. The constant conjunction of events is neither necessary nor sufficient for establishing a law (Bhaskar, 1975, p. 33). The experiment was necessary though, because *"… the pattern of events forthcoming under experimental conditions would not be forthcoming without it"* (Bhaskar, 1975, p. 33). Persons are (sometimes) responsible for both conjunction of events and the experience of those events: in a world without experiments (closures), hence, without invariant patterns, laws would still apply (Bhaskar, 1975, p. 34).

From Bhaskar's response we can surmise that the real objects of experimentation are not events but the underlying mechanisms responsible for events (also Bhaskar, 1975, p. 46). These mechanisms are responsible for the operating of laws and as soon as one makes a distinction between the factuality of a law as opposed to the events they create, a fundamental differentiation in the reality we are working with becomes apparent.[235]

From the example above one can also see that a distinctive mark of experimentation is the ability to create closed systems whereby other influences, processes and sticky hands are controlled that might interfere with the mechanism one is trying to isolate. It might even be apparent that such a closure must be worked for, and this fact indicates its artificiality. Because a closure is artificial, it implies that normal circumstances (or nature not tampered with) involve open systems where mechanisms interfere with each other and laws are not always apparent (or observable) in events.[236]

Consequently, from the transcendental analysis of experience and experimentation, the principles of reality as (a) intransitive (laws as non-empirical and independent of events, i.e. reality is independent of humans), (b) differentiated (open and closed systems) and (c) structured (mechanisms underlying events or depth ontology) are established. These three principles militate against the *empirical realism* underlying empiricism and Transcendental Idealism, and in the end it does not square with positivism. Underlying empirical realism is *regularity determinism* and will be discussed below.

---

[235] This differentiation will be discussed below: it is the layeredness of an ontologically distinct reality.

[236] Collier (1994, pp. 37-38) warns against regarding artificiality the same as closure. An experiment is what it is because of closure and not because of simulating reality, and thus, being artificial. I use "artificial" in order to juxtapose closed with open or in the last instance, natural.

7.3.3 *Reality as intransitive: its independence of persons*

The claim by Bhaskar (1975, p. 47) that *"The world consists of mechanisms, not events,"* follows from the transcendental question, namely, "how must the world be in order for science to be possible?" First of all, allowance is made that the world consists of something and not nothing, whether it is events or mechanisms, and secondly, that it consists of something particular (mechanisms) and not something else (events). Thus, the first step towards a realist philosophy of science is taken by claiming that there is a world to be known. This acknowledgment still does not establish the independence of mind and reality; one can be caught in the grasp of a fundamental idealist position, i.e. the fact that two persons are looking at the sun so that one sees the sun rising and the other the rim of the earth dropping away (cf. Bhaskar, 1975, p. 31) merely proves that reality is constructed in the eyes of the beholder. So how does Bhaskar show that reality is fundamentally objective (intransitive) and that it has a certain character (structured)? The first question will be looked at in this section and the next in the section on reality as structured (see paragraph 7.3.5 below).

7.3.3.1 Transitive and intransitive objects of knowledge

Bhaskar (1975, p. 21) distinguishes between transitive and intransitive objects of knowledge. Transitive objects of knowledge are those man-made objects of knowledge flowing from scientific, technological and cultural production. For example, how to build a vehicle and how to operate it is an example of transitive knowledge. Bhaskar (1975, p. 21) calls transitive objects (Aristotelian) material causes, i.e. it is the raw material that exist prior to scientific activity, namely, theories, models, paradigms, techniques and so on. The implication is—and in full acknowledgement of hermeneutics—knowledge-producing actions are not executed in a vacuum; it requires antecedent knowledge or background knowledge (Popper) or a tradition (Habermas).

As I understand "transitive," as Bhaskar uses it, it refers to the grammatical usage of the word, namely, a verb requiring an object (Anderson, 2004), i.e. it is dependent for its actualisation on something else. In the same way, transitive or socially produced knowledge is dependent for its existence on people (Hartwig, 2007, p. 263). Intransitivity in grammar, though, means that a verb does not require an object. Thus, the term "intransitive" dimension means that it exists independently from the activity and knowledge of people.

Our knowledge constructed from scientifically engaging with objects is socially produced (Bhaskar, 1975, p. 24). It can be revised, speculated upon and plainly be wrong. The object of science, namely, the reality out there, does not depend on our knowledge of it and in fact, exists independently of our knowing minds. This is a realist assumption as opposed to idealism where the structures of the world are

172

dependent upon the structures of the human mind. Our knowing the world, in Kant's Transcendental Idealism, depends on the categories of the mind.

According to Bhaskar (1975), the dependence on the human mind of what reality is, shows a radical anthropocentrising of reality. By defining reality epistemically, philosophy of science since Hume has not extracted itself from the numerous conundrums it created for itself (Bhaskar, 1975, p. 34). The anthropocentrising of reality lead to what Bhaskar (1975, p. 36) calls the *epistemic fallacy*, namely, that reality or ontology is defined in terms of epistemology. Both Transcendental Idealism and classical empiricism (and of course modern variants of empiricism such as positivism and idealism such as constructionism) make this mistake. Empiricism reduced reality to what can be experienced (Bhaskar, 1975, p. 34) and idealism to what can be thought.

The main question is why one should make the distinction between the transitive and intransitive dimensions? Why is it necessary for science? Again we come back to the transcendental question raised by Bhaskar: "what should the world be like in order for science to be possible?" Scientific activity is a *sine qua non*: that it is practiced the world over is a given along with its successes and mistakes. If we ask whether we can imagine science without transitive objects, the answer ought to be negative (Bhaskar, 1975, p. 22): this in itself is a result of the transcendental analysis of science, i.e. what are the conditions for the practise of science? The answer is transitive objects and, of course, a social community of scientists! What does discoveries such as Ohm's law, the constitution of silicone and the nature of black holes say of the world? According to Bhaskar our understanding and descriptions of Ohm's law, the way silicone behaves in microchips or the description of black holes are *transitive,* consequently, pre-existing and fallible, i.e. corrigible. Despite their uncertain nature these descriptions somehow allow us better practices in and explanations of our world.

We cannot imagine a science without transitive objects and correspondingly we cannot imagine a science without intransitive objects (Bhaskar, 1975, p. 23) just as we cannot imagine a world without intransitive objects although we can imagine a world without transitive ones (and people) (Bhaskar, 1975, p. 22).

7.3.3.2   Ontological commitments

A philosophical position about science has an implicit or assumed ontology. Therefore, positions such as empiricism or Transcendental Realism both hold that the observation of a constant conjunction of events is necessary to identify a law; both are " … *committed to the belief that, given that science occurs, there are such conjunctions"* (Bhaskar, 1975, p. 29). Bhaskar (1975, pp. 29-30) notes the following about ontological commitments: (a) a belief about how reality should be is hypothetical or conditional and (b) statements about being can only be made with reference to

173

science. The latter point implies that only science can tell us what the particular content of an ontology is: we can know nature through science but this does not imply that "… *its nature is determined by (the structure of) science*" (Bhaskar, 1975, p. 30). Bhaskar (1975, p. 30) warns against taking this order, namely, science-being (i.e., our way of access to being) as the natural order of the state of affairs. The natural order is actually being-science and what the structure of science is is contingent on the nature of being. The converse does not hold.

The former point (a), implies that theories of sciences harbour implicit or explicit views of ontology and these views are based on a view of how reality should be *on the condition* that science is practiced. Thus, empiricism, Transcendental Idealism and Transcendental Realism construct reality to be a certain way. As we have seen above, for the empiricist and transcendental idealist constant conjunctions are the outcome. Bhaskar (1975, p. 29) summarises this argument as follows and provides us with a very clear account of the transcendental question:

> *It is not necessary that science occurs. But given that it does, it is necessary that the world is a certain way. It is contingent that the world is such that science is possible. And, given that it is possible, it is contingent upon the satisfaction of certain social conditions that science in fact occurs. But given that science does or could occur, the world **must** be a certain way. Thus, the transcendental realist asserts, that the world is structured and differentiated can be established by philosophical argument; though the particular structures it contains and the ways in which it is differentiated are matters for substantive scientific investigation. The necessity for categorical distinctions between structures and events and between open systems and closed are indices of the stratification and differentiation of the world, i.e. of the transcendental realist philosophical ontology* (Bhaskar, 1975, p. 29).

If then, the empiricist and the transcendental idealist both believe that constant conjunctions characterise reality and if the critical realist is committed to the belief that, given that science does occur, reality is structured and intransitive, how do we decide between the two beliefs? What grounds do we have to accept the untenability of empirical realism and accept Transcendental Realism instead?

The point is pressing especially, because, as we will see below, experience and empirical testing play a role in Transcendental Realism's process of science. If empiricist, transcendental idealist and transcendental realist positions assume that experience is important in science, can we regulate the difference to a matter of perspective? In other words, can we say that it is not experience *as such* that is the problem with empiricism and positivism; is it the way experience is *viewed* in their beliefs how science works that is the problem? In effect, the result of this question is that no matter which philosophical position one takes, the practice of science will happily continue unabatedly and continue to show real progress. Accordingly, how

crucial is it to have an adequate philosophical account of science—if it does not make a difference then is the exercise of hammering out a transcendental realist position for science futile? The positivist, constructionist, empiricist and so can continue with their pronouncements about how science should be viewed and practiced, but their effect is rarely felt on actual practices.

To summarise, an ontological commitment, whether explicit or implicit, is implied in any view on science. It is conditional, that is, any position can be right or wrong about the *nature* of reality. The transcendental realist assumes that the realist position supersedes empirical realism, but the question is how do we know this? How does a transcendental realist view of experience differ from others and is it really all that important to be transcendental realist with respect to science?

The answer to the question of the choice between empirical realism or Transcendental Realism lies in the *intelligibility* of experimental work; it only makes sense if nature is intransitive, structured and differentiated (Bhaskar, 1975, p. 33). To reiterate the point of paragraph 7.3.2.2 briefly with another example: a scientist wants to demonstrate Ohm's law by setting up an experiment. The scientist acts as causal agent by making certain events happen and controlling others. If he succeeds in controlling the experiment carefully the events demonstrating Ohm's law will be perceivable. If not, the expected sequence of events will not appear. *Does this mean that the Ohm's law is thereby negated in some way?* As we intuitively know, the law must still exist but it was not manifested in the scientist's failed experiment. Thus, the scientist does not have the power to overturn the laws of nature (Bhaskar, 1975, p. 34); he controls the events that exhibit the law, and the events, if they do appear, cannot be the law because non-appearance does not invalidate the law. Thus, experimental activity assumes laws to be ontologically distinct from what happens in the experiment, namely, from the sequence of events.

As Bhaskar (1975, p. 34) says, laws do not need human beings to be effective; laws continue to be executed whether or not a certain sequence of events are visible for human beings to say that the law was demonstrated by that particular conjunction of events. It is easy to imagine a world without human beings, but does that mean that laws cease to exist? Certainly not! Apples falling from trees and feathers from birds will still follow Newton's law of gravity by approximation. I say by approximation because only rarely will a constant conjunction of events without humans' intervention prevail, hence, only rarely will there be a closed system where empirical events will demonstrate the law.[237] As such, nature is an open system where

---

[237] As we know comparing apples falling and feathers falling requires a CP clause, i.e. a closed system—without air resistance!

laws are *"… possessed unexercised, exercised unrealised, and realized unperceived (or undetected) by men"* (Bhaskar, 1975, p. 18). To summarise:

The intelligibility of experimental activity presupposes then the intransitive and structured character of the objects of scientific knowledge, at least in so far as these are causal laws. And this presupposes in turn the possibility of a non-human world, i.e. causal laws without invariances and experiences, and in particular of a non-empirical world, i.e. causal laws and events without experiences; and the possibility of open systems, i.e. causal laws out of phase with patterns of events and experiences, and more generally of epistemically insignificant experiences, i.e. experiences out of phase with events and/or causal laws.

In saying that the objects of scientific discovery and investigation are intransitive I mean to indicate therefore that they exist independently of all human activity; and in saying that they are structured that they are distinct from the patterns of events that occur (Bhaskar, 1975, p. 35).

The structured nature of reality will be discussed below, but as Bhaskar implied above, the patterns of events do not define, capture the nature of or constitute the objects of science; scientific objects are more than their events, in fact they exist even if they do not display events. By distinguishing between events and structures (or things) in this way we are a step closer to refute empirical realism.

7.3.3.3   The nature of the intransitive

Bhaskar employs a number of concepts to describe the nature of the world. Flowing from his argument examined above is the assumption that structures and events are different things. Events cannot be the structures but are the result of structures. When Bhaskar distinguishes between structures and events he refers to mechanisms or more specifically *generative* mechanisms. Mechanisms in nature are responsible for events and they are enduring, they do not have to act, and when they act their results need not be apparent in observable events as we have seen above (Bhaskar, 1975, p. 46). The reason their results need not be realised is that in an open system other mechanisms and events interfere with each other. In a closed system such as in a laboratory, other mechanisms are controlled not to interfere and a person acts as causal agent to trigger the mechanism where upon, if the experimenter is lucky, the events will show the active law.

The world consists of mechanisms not events. Such mechanisms combine to generate the flux of phenomena that constitute the actual states and happenings of the world. They may be said to be real, though it is rarely that they are actually manifest and rarer still that they are empirically identified by men. They are the intransitive objects of scientific theory. They are quite independent of men — as thinkers, causal agents and perceivers. They are not unknowable, although knowledge of them depends upon a rare blending of

176

intellectual, practico-technical and perceptual skills. They are not artificial constructs. But neither are they Platonic forms. For they can become manifest to men in experience. Thus we are not imprisoned in caves, either of our own or of nature's making. We are not doomed to ignorance. But neither are we spontaneously free. This is the arduous task science: the production of the knowledge of those enduring and continually active mechanisms of nature that produce the phenomena of our world (Bhaskar, 1975, p. 47).

Thus, events and laws are not the same—events are merely the way laws are made accessible to persons. Sometimes the particular sequence of events forms a conjunction that reveals the operation of a law or the operation of a mechanism. Generative mechanisms or structures cause[238] events, processes and so on, but according to Bhaskar (1975, p. 49) the concept of a causal law presupposes the concept of a causal agent. The causal agent cannot be the mechanism—the mechanism is the causal *power* of a thing—consequently, it is a thing. Things have generative mechanisms that cause other things to happen. Although, as we have seen, laws and events are ontologically distinct, the ontological status of a law is not the same as the thing that gives rise to it: *"Laws then are neither empirical statements (statements about experiences) nor statements about events. Rather they are statements about the ways of acting of independently existing and transfactually active things"* (Bhaskar, 1975, p. 52).

In the next section laws will be examined. They are part of the intransitive domain: this view entails a necessary corrective on the empirical realist view of laws. Laws are normic statements (or transfactual statements) and not statements about events nor empirical statements; they express the tendencies of things (Bhaskar, 1975, p. 92).

7.3.3.4   What are laws?

Laws have a fundamental position in the traditional view of science and determine what science aims to do. The problem with positivism is its reliance on defining laws as the "constant conjunction of events."[239] According to Bhaskar (1975)

---

[238] It will be helpful when speaking about "cause" to remember the following Aristotelian distinctions (Craig, 2005, p. 54): (a) Material cause—the stuff a thing is made of; (b) Formal cause—a definition of what a thing is; (c) Efficient cause—the source of change in a thing; (d) Final cause—the end result at which a process is aimed

[239] The mere observation of two events following each other does not constitute a law because the experimenter is actually the causal agent in this instance. As I understand it what Bhaskar says is that empiricism identifies laws with the actual events taking place. If this is so this is a form of severe actualism and I am not too sure if I understand it: positivism is precisely criticised for its emphasis of laws whether they exist independently of the event or not. How in fact will the belief that a law is ontologically distinct from the event change what the positivist believes? Does the positivist in fact say, if there are no observable events then there are no laws? In some way, my observation of a number

177

laws and events are ontologically distinct (Bhaskar, 1975, p. 46) and the mistake that positivism and variants of empiricism made was to conflate the domains of the actual and real. A proper understanding of a law is essential to keep the distinctions between levels of reality separate.

The term "law" in Bhaskar's view is not essential and he uses other terms to describe what laws are supposed to express. First of all, laws do not describe a constant conjunction of events which means that laws are neither empirical nor actualist statements. Laws are tendency[240] statements, normic[241] or transfactual,[242] expressing the working of enduring and generative mechanisms of things. Thus, reality consists of things that act and the aim of science is to uncover these things.[243]

Things have powers and liabilities. Their ability to act is their power and powers are the ability to effect change whilst liability is the ability (albeit passive) to suffer change (Bhaskar, 1975, p. 87). This means that stuff can do certain things or suffer certain things or actions they would otherwise never do. Thus a vehicle can have the power to reach 200 km/h but probably would never exercise this power on a South African road.

The *things* or mechanisms are enduring (Bhaskar, 1975, p. 46) and their actions are their *tendencies* (Bhaskar, 1975, p. 51).[244] Tendency is an apt term because it

of instances that heavy things fall gets severed from the belief that if I let go of an object it will fall (law). If no event prevails, the positivist surely believes that if he lets go of an object the law will at that instance be effected?

[240] Defined on p. 24.

[241] Defined on p. 25.

[242] Defined on p. 25.

[243] *"The world consists of things, not events. Most things are complex objects, in virtue of which they possess an ensemble of tendencies, liabilities and powers. It is by reference to the exercise of their tendencies, liabilities and powers that the phenomena of the world are explained. Such continuing activity is in turn referred back for explanation to the essential nature of things. On this conception of science it is concerned essentially with what kinds of things they are and with what they tend to do; it is only derivatively concerned with predicting what is actually going to happen. It is only rarely, and normally under conditions which are artificially produced and controlled, that scientists can do the latter. And, when they do, its significance lies precisely in the light that it casts on the enduring natures and ways of acting of independently existing and transfactually active things"* (Bhaskar, 1975, p. 51).

[244] *"On this interpretation then the generative mechanisms of nature exist as the causal powers of things. We now have a perfectly acceptable ontological basis for causal laws. For if it is wrong to reify causal laws, and it is wrong to reify generative mechanisms, it cannot be wrong to reify things! However, the fact that the transcendental analysis of experimental activity showed that generative mechanisms must go on acting (i.e. that causal laws must be efficacious) outside the closed conditions that permit their identification means that causal laws cannot be simply analysed as powers. Rather they must be analysed as tendencies. For whereas powers are potentialities which may or may not be exercised, tendencies are potentialities which may be exercised or as it were 'in play' without being realized or manifest in any particular outcome. They are therefore just right for the analysis of causal laws"* (Bhaskar, 1975, p. 50).

expresses the propensity of something to act in a certain way. It is a propensity because something might or might not act in a certain way[245] and its effects might or might not be apparent. An active tendency (or its activity) is expressed by a law-like statement, i.e. if the antecedent conditions are satisfied then the consequents will be apparent (cf. Bhaskar, 1975, p. 98). The statement expressing the activity of the tendency expresses the operation of a generative mechanism. Importantly, the outcome of a tendency can be hindered and a tendency does not say anything "… *about the conditions*[246] *in which the tendency is exercised and hence not about whether it will be realized or prevented*" (Bhaskar, 1975, p. 98). A tendency statement is applicable in both open and closed systems, which makes it different from a so-called empirical law (nomic) statement that is only applicable in closed systems. In the following quote Bhaskar emphasises these and additional aspects of tendency statements:

> *The real basis of causal laws are provided by the generative mechanisms of nature. Such generative mechanisms are, it is argued, nothing other than the ways of acting of things. And causal laws must be analysed as their tendencies. Tendencies may be regarded as powers or liabilities of a thing which may be exercised without being manifest in any particular outcome. The kind of conditional we are concerned with here may be characterised as normic. They are not counter-factual*[247] *but transfactual statements. Nomic*[248] *universals, properly understood, are transfactual or normic statements with factual instances in the laboratory (and perhaps a few other effectively closed contexts) that constitute their empirical grounds; they need not, and in general will not, be reflected in an invariant pattern or regularly recurring sequence of events* (Bhaskar, 1975, p. 14).

Like classical statements of laws (nomic statement), the *normic statement* is a conditional, namely it expresses what would hold if certain conditions were achieved. Bhaskar also calls the normic or tendency statements *transfactual* statements. A factual statement would be an empirical statement applicable to closed systems but a tendency is applicable in open and closed systems alike: they are applicable *across*[249]

---

[245] This statement must be qualified: the acting in a certain way or not merely means that sometimes its acting is thwarted and it does not mean that it acts differently each time it acts!

[246] It is not clear to me whether the conditions are the initial conditions stipulated in the antecedent or whether is it merely the contingent conditions wherein which the mechanism finds itself over and above the condition of operating in an open or closed system.

[247] A counter-factual is a contrary-to-fact conditional (Audi, 1995, p. 163). The antecedent of this conditional is assumed to be false. The way Bhaskar uses it refers to law-like statements which normally support a counterfactual (Honderich, 1995, p. 169).

[248] Nomic means scientific law-like statements in contrast to statements about contingent events or value or legal statements which has a law-like appearance (Honderich, 1995, p. 624).

[249] "Trans" means amongst others "across" or "beyond" (Anderson, 2004).

situations but they would, as he says in the quote above, have factual instances in certain (closed) contexts.

When is a law established? Corresponding to the three phases of science discussed in paragraph 7.3.6 below, Bhaskar (1975, pp. 163-164) provides the following steps: (a) Does any of the empirical regularities observed provide a candidate for a law? (b) Do we have other explanations or reasons that the *"predicates instantiated in the law-like statements should be conjoined"* over and above the observed regularity? This question refers to the model-building phase (cf. paragraph 7.3.6.2 below) where a plausible mechanism for the observed regularities is constructed. The radical empiricist and transcendental idealist utilise the model as a heuristic device (Bhaskar, 1975, p. 162). (c) If we found a reason in step (b), does it point to an enduring mechanism? Only the transcendental realist can move on to the third level because of her belief in an intransitive dimension. Of course, one must ask whether the reality of a "model" hinges on mere belief or does it entail something different from empiricist scientific practice?

7.3.4   Reality as differentiated: open and closed systems

As we have seen above, Bhaskar (1975) makes a distinction between open and closed systems. This distinction follows from the transcendental analysis of experimentation and is crucial to his argument against empiricism.

The world we live in can be called an open system because principled closure is difficult or sometimes impossible as in the social world. Open systems are the rule rather than the exception in nature and they are pervasive (Bhaskar, 1975, p. 104). Nature is open because laws/tendencies that govern behaviour of the phenomena can be *"… possessed unexercised, exercised unrealised, and realized unperceived (or undetected) by men"* (Bhaskar, 1975, p. 18; see also Collier, 1994, p. 37). However, it is important to realise that laws, as the expression of the tendency of a mechanism to behave in a certain way and on occasion to give rise to events, can clash, interfere and only on occasion be perceived to happen. Bhaskar (1975, p. 13) says that perceivable events and underlying laws/causes are not always in phase.

A closed system is one where a number of mechanisms are held constant so that only one mechanism can be triggered. The events that ensue correspond to a constant conjunction of events. Some systems can be closed with some effort such is in chemistry and physics while others cannot (such as palaeontology) and others only with difficulty, such as in biological science. Others are closed in principle such as those studied by astronomy[250] while others can never be closed such as in social and

---

[250] I am not sure why Bhaskar says astronomy is closed. On the time and distance scale we perceive the events it might seem closed but given our ability to detect events and objects at a finer resolution, we realize that the universe is even more complex than what we experience on earth.

human sciences.[251] For these sciences where experimentation cannot be effected a proxy for closure must be found. According to Bhaskar (2005, p. 52) such situations in the social sciences can be found in periods of socio-historical crisis.

According to Bhaskar, the first mistake made in the classical view of science is (a) the assumption that laws apply unfettered in open systems, and secondly (b) that laws and events are one and the same thing (Bhaskar, 1975, p. 46). The first assumption refers to explanatory systems such as those of Popper and Hempel, the covering law and the like were antecedent conditions plus a law can be used to deduce the consequent. Deductive models such as these cannot be applied in open systems, which is how it is assumed that they should be applied. The classical view mistakenly applies closed system models to open systems.

Thus, if one can show that the distinction between open and closed systems is necessary for science, then one can show what it means for the ontological status of laws when we do find a constant conjunction of events. The problem with the classical view is that the epistemological burden was shifted to observable events, thereby assuming that if they obtain, the law is demonstrated.

7.3.4.1   Regularity determinism and conditions for closure

Behind the idea of closure stands the thesis of *regularity determinism* that, in short, stipulates that whenever X takes place, Y happens or as Bhaskar (1975, p. 69) puts it, "*whenever this then that*." Importantly, the thesis of regularity determinism need not be true for one to be able to construct closed systems;[252] it states the assumption that if a closed system were to be constructed, an if-then situation will play itself out. According to Bhaskar (1975, p. 74) a closed system can be defined as one where the system is isolated from outside influences or where the outside influences are kept constant. Bhaskar's (1975, p. 75) argument is interesting at this point: if we have succeeded in isolating a system by keeping external influences constant or segregated and regularity determinism is true, will the "if-then" formula be satisfied?[253] Taking an example of, for instance, a dog,[254] can we say that the behaviour of the dog will be predicted when all outside or external influences are kept at bay? Knowing my dogs, I certainly will be able to predict at least this: because I am not controlling their inner states (such as deciding that they are bored with my exercise) then they are prone to

---

[251] This is one of the points I disagree with as will be seen.

[252] This is an important perspective contributing to the solution of beliefs and practice referred to above on page 20. The way Bhaskar puts it is important: the belief is not necessary to enable constructing a closed system, so on what does it depend? What difference does the belief of regularity determinism make?

[253] I am also interested in the type of argument as well: this is a transcendental argument of the form "what are the conditions for X in order for X to take place?"

[254] Bhaskar's example is an elephant.

react differently each time I isolate external conditions. Internal states are closely connected to the complexity of the system. A dog is internally complex[255] and if I cannot control single aspects of internal states then closure is difficult.[256] Atomicity of systems is thus one of the requirements for control because it guarantees control of internal states that are not structured, complex or differentiated.

The next question is, then, will the "if-then" principle hold if one has managed to control external conditions and internal states, i.e. isolated atomistic elements? The question is what one does with a complex individual except to assume that it could in principle be possible to break down the system into its separate parts (atoms) and in this way control the system. Thus, we have to assume (as empiricists do) that the sum of the parts constitutes the behaviour of the whole. Bhaskar (1975, p. 76) calls this the requirement of additivity. It could be that a system cannot be isolated which means, as we have said above, the external influences need to be kept constant. Similarly, if atomicity is not possible, internal states must be kept constant and in the case of non-additivity of atomistic elements their combined effect must be kept constant. The conditions then for closure are (a) isolation, (b) atomicity and (c) additivity (cf. Table 1).

Table 1 Limit conditions for a closure, i.e. for the stability of empirical relations (Bhaskar, 1975, p. 76)

Conditions for closure	Epistemically dominant case	Epistemically recessive case
(A) Systems	Isolation	Constancy of extrinsic conditions
(B) Individuals	Atomicity	Constancy of intrinsic conditions
(C) Principle of organisation	Additive	Constancy of non-additive principle

The conditions for closure, however, are so restrictive that a causal mechanism cannot be isolated when we actually manage to achieve closure! Atomicity implies an absence of powers because internal structure and complexity are required for powers (Bhaskar, 1975, p. 79).[257] When a system is so wide as to include everything in the world there can be no external factor impinging on the system and if it is reduced to

---

[255] Internal complexity of an organism contradicts Harré's view of power particulars, which is in principle not internally complex.

[256] Is this what makes closure in humans/social sciences impossible? If so then the degree of control will depend on the level of internal systemic complexity such as in livings things in a hierarchy from humans to bacteria.

[257] One should examine the grounds Bhaskar has for this claim: it is in direct contrast to Harré's claim discussed previously. How does this square with Situational Realism's non-constitutive relation principle (see paragraph 5.4.6).

a single atomistic element it cannot have internal states influencing its actions. The latter situation illustrates the extreme nature of a system's closure that has the effect of excluding internal causes for action. The implication is that things need to be structured to be able to have internal causes.[258] A special case of the atomicity requirement of closure is the absence of powers (and in the above nomenclature, constancy of powers). For the empiricist the absence of the *observable* effects of a power[259] means non-existence, i.e. the thing does not exist (because it cannot be observed directly or indirectly). For the realist the absence of power merely means that a mechanism might be unexercised or unrealised and not necessarily non-existent. The empiricist way of coping with the non-realisation of effects in a closed system is to assume that some of the conditions of closure have not been achieved. She has to refine the conditions by including more and finer aspects of the system. This is an *epistemic* strategy, that is, some conditions have not been thought of which could affect the outcome.

However, the realist takes an *ontological* strategy: that powers get realised or not is just the way nature is. Thus, if closure fails it does not mean that the mechanism underlying the searched for events does not exist; it merely means that actualism[260] (or the position that only what is actual or realised in events is real) is not true. In other words, the thesis that events should be in phase with laws (as possible or actual events taking place) as soon as a closure has been achieved does not reflect the way things are. Regularity determinism does not hold because the only conclusion it affords when events do not take place in a closure is that (a) the law does not exist or (b) some aspect was not controlled.[261]

The aim of a closure is to exclude or hold constant influences so that events can be conjoined. What the empiricist sees is at least two events following each other repeatedly. What causes these events? A concrete example might help to clarify the issue: one billiard ball bumps into another and the second, initially inert, starts moving. The experimentalist saw two events: a moving ball A bumping in to static

---

[258] See the discussion about the impossibility of internal causes (paragraph 5.4.7).

[259] Of course, the empiricist would have problems with the concept of power in any case.

[260] And regularity determinism.

[261] The next step in the belief-practice problem is to determine what the conclusion is when certain conditions prevail. I.e. as in the case with regularity determinism, Bhaskar's strategy is to let the empirical situation play out and then ask what the implications for regularity determinism are. For example, if a constant conjunction of events does not take place in a closure (i.e., we have a failed experiment) then the only conclusion the regularity determinist can draw is that closure was not obtained or the law does not exist. The transcendental realist's conclusion allows for a third option, namely, an unrealised mechanism. Thus, the scientific practice of closure remains the same for transcendental realists and regularity determinists. The inferences about the outcome differ. It also means that the scientific practice of effecting closure is neutral with respect to its philosophical assumptions.

ball B and a moving ball B. What caused B to move? According to regularity determinism the events followed the schema "if x then y." However, one must add the ceteris paribus (CP) clause. Thus if A moves linearly in the direction of B and they bump, then B will move (of course, there are underlying laws which we can ignore for the moment) *ceteris paribus,* i.e. all other things being equal (which is why the conditions for closure are required). The empiricist will say that there is no cause (and when he does admit a cause it will be in an analogical sense) except for A bumping into B. Thus, each time A moves to B the same events ought to be perceived. If we do not see B moving then something with the closure conditions must be wrong (the CP-clause was violated). However, if the experimentalist is a realist then she knows that mechanisms' operations are not always in phase with events. Not finding events in her experiment means that the mechanism could have exercised its powers but events (effects) were unrealised.[262]

7.3.4.2   Variants of actualism

Bhaskar (1975, pp. 92-93) summarises the unsuitability of actualism by distinguishing between strong actualism, weak actualism and Transcendental Realism. Strong actualism entails absolute invariance of sequences, i.e. y always follows x and this applies in open and closed systems alike (Bhaskar, 1975, p. 92). Weak actualism is what we have dealt with above: a closure is required for invariance and the CP-clause must be satisfied. Bhaskar (1975, p. 92) asks what is responsible for phenomena in open systems if laws only apply in closed systems?

The existence of open systems and the way laws are realised says something about the truth of weak and strong actualism. It is only Transcendental Realism that ensures the intelligibility of laws in open systems. An open system has the following characteristic: it is always possible that even if the antecedent conditions for a law are fulfilled the consequents might not realise (Bhaskar, 1975, p. 93).[263] We have seen

---

[262] This is unsatisfactory, because when do we know a tendency has been established or are merely unexercised? Do we need three experiments, four?

[263] The mark of an open system almost seems to be used in a circular way: the mark of an open system is the non-fulfilment of the consequent; as soon as you have the non-fulfilment of a consequent then one has an open system or stated as follows: if x then y; if y then x. Bhaskar (1975, pp. 93-94) criticises the circularity of the weak actualist argument: the weak actualist sits with a problem if a law-like statement's consequent is not fulfilled. Either it is inapplicable (the CP-clause is not satisfied) or it is false. According to Bhaskar the weak actualist cannot decide whether it is inapplicable or false. For it to be false the CP-clause must be true and the consequent unrealised; for it to be inapplicable the CP-clause must be unfulfilled. The only way to determine whether the CP-clause is fulfilled/unfulfilled is to say that if the consequent was realised then the system was closed. How do we know the system is closed? We know that it was closed because of the consequent that was realised. Thus, the one depends on the other in a circular fashion.

The question is whether Bhaskar does not define an open system in the same circular fashion. The hallmark of an open system, as we have seen, is that no constant conjunction of events prevails,

this above. The effects of laws need not appear as observable events because laws can be exercised but not necessarily realised. If we postulate a law-like statement with fulfilled antecedents but unrealised consequents then the statement is false according to the strong actualist because absolute invariance must hold (Bhaskar, 1975, p. 93). Strong actualism cannot allow for open systems: the universality of laws requires reality to be closed and regularity determinism applies without exception. The latter clause implies strict actualism, i.e. empirical events taking place that accord with the antecedents and consequents of the law. However, universality and actuality cannot both hold or rather a law cannot be both empirical and universal (Bhaskar, 1975, p. 91). Consequently, strong actualism is not intelligible, because the instantiation of a law's antecedents need not be followed by its consequents; a law is not empirical but universal or *transfactual*.

For the weak actualist the statement is inapplicable because the CP clause could have been violated (closure was not achieved) whilst for the transcendental realist it is both applicable and true *"… if it correctly describes the working of a generative mechanism and the mechanism was really at work in that instance"* (Bhaskar, 1975, p. 93).[264] Weak actualism allows for open systems because it requires closed systems for the instantiation of a law. However, it flounders on the question of what governs phenomena in open systems. Either nothing does or the weak actualist must choose between strong actualism and Transcendental Realism. For, if phenomena in open systems are governed by laws, then the only intelligible position is Transcendental Realism. If phenomena are governed by laws and their operation is the same as in closed systems, then reality must be closed and this argument leads to strong actualism (Bhaskar, 1975, p. 94), and as we have seen this cannot be true.

An interesting question follows from this conclusion, viz., how can one know that a mechanism exists and was working at all? The answer is simply: by experimental work, but instead of using empirical work to confirm the law on grounds of a constant conjunction of events, the realist works to uncover the

---

i.e. the consequent is not realised. So reality is necessarily open except for a few rare closures and then those closures effected by persons. One can pose the definition of an open system in same way Bhaskar related closure and CP to each other: you know a system is open when laws are not realised; you know that laws are not realised because they operate in open systems. How do we perceive invariances then? Given that reality is open and laws and events are not always in phase, are we able to observe invariances that we have not worked for (i.e., effected in closures)? Is it not possible to go and sit somewhere and recognise patterns in events? This exercise excludes astronomy because it studies a naturally closed system.

[264] The question is how do we know that a mechanism was at work or that our law correctly described the mechanism's working? Do the empiricist struggle to obtain closure and rule out confounding variables and the transcendental realist's struggle to trigger the mechanism not amount to the same thing?

mechanism in a closed situation.[265] The proper understanding of a law hinges not on statements describing events, nor on invoking the CP-clause, but on laws as describing the actions of mechanisms, on their transfactual application, and not their universality as laws. Universality of laws understood as a constant conjunction cannot apply to open systems. The reason Bhaskar calls laws transfactual (the term he uses instead of "universality") or normic statements, is that they apply in both open and closed systems and the consequent need not be realised. Mechanisms tend to act in a certain way if the circumstances are right and this *tendency* is what a law describes. It does not describe the *circumstances* or the "*circumambient conditions*" of an outcome, i.e. law p (if x then y) will be instantiated if the conditions are q. This approach is just another way of invoking the CP-clause.

One should realise that the possibility of closure is required for experimentation and experimentation is required for discovering invariances and confirmation of the operation of a mechanism. Certain non-experimental sciences do not have this luxury. Does this mean that biology, or palaeontology as examples, can never explain data in the same way as the experimental sciences? How should we view the social and human sciences? Can there be experiments in these sciences? Bhaskar (1975, p. 104) views closure in social systems and human sciences as inappropriate or even absurd. The reasons are that "restricted closure" cannot apply in such systems and, therefore, experimentation cannot be done. Does this mean that there are no social or psychological laws, i.e. does want of closure mean absence of law?

7.3.5 Reality as structured: the primacy of mechanisms

7.3.5.1 Three domains of reality

Flowing from the transcendental analysis of experimentation is the last assumption of how reality is, namely, structured (see p. 171 above). That reality is structured means that it is not one-dimensional but consists of levels that Bhaskar calls domains. Table 2 depicts Bhaskar's famous diagram for the domains of reality. Experiences, events and mechanisms form the three domains of reality (Bhaskar, 1975, p. 56). Consequently, the domain of the real includes mechanisms, events and experiences; the domain of the actual, mechanisms and events; the domain of the empirical, only experiences (see Table 2). Mechanisms, events and experiences are ontologically distinct from each other, or stated otherwise, mechanisms are distinct from the conditions that allows us access to them, namely, events. Similarly, events are distinct from their conditions of access, namely, experience. Not only are they

---

[265] *"Moreover for the transcendental realist the statement can be known to be both applicable and true, namely if the statement has been independently verified (e.g. under experimentally closed conditions) and there is no reason to suppose that the nature of the thing possessing the tendency whose operation is described in the law has changed"* (Bhaskar, 1975, p. 93)

distinct, they are real[266] (Bhaskar, 1975, p. 56). The fact that we can distinguish between different domains, constituted by mechanisms, events and experience, is the result of the structured nature of reality; the fact that they are ontologically distinct is the result of the intransitive nature of reality.

Traditionally these levels were the objects of epistemic access to reality. Obviously, mechanisms are out of the question for positivism and classical empiricism as expressed by the empirical realism underlying both. Empirical realism collapses the three levels into one (see Bhaskar, 1975, p. 57 and 58) and the ontology it constructs is based on the *"... category of experience, as expressed in the concept of the empirical world and mediated by the ideas of the actuality of the causal laws and the ubiquity of constant conjunctions ..."* (Bhaskar, 1975, pp. 56-57). Bhaskar (1975, p. 57) says that the three levels of reality (the real, actual and empirical) are not normally in phase. This is, of course, a characteristic of open systems. They are only in phase, and that is when the scientist has access to the reality of a mechanism, within the social activity of experimentation (Bhaskar, 1975, p. 57). It is important to see that Bhaskar distinguishes between the social activity of scientists and objects/events independent of human beings. The result of experience and events are facts and conjunctions. In (empirical) experience knowledge is given—this we know from Kant—but only a posteriori. Laws, or the evidence for laws, are given through constant conjunctions of events. We must realise that the experience of facts is dependent on us as is the constant conjunctions of events: facts or knowledge and knowledge of laws are fundamentally sociological phenomena in a world *"Without men* (sic) *there would be no knowledge, only its traces. In this sense it depends on men. But though it exists only in virtue of the thoughts and actions and products of men, it is irreducible to them"* (Bhaskar, 1975, p. 195).

Table 2 The three domains (From Bhaskar, 1975, p. 56)

	Domain of the real	Domain of the actual	Domain of the empirical
Mechanisms	✓		
Events	✓	✓	
Experiences	✓	✓	✓

7.3.5.2   Generative mechanisms

The concept of generative mechanisms was already encountered in a number of contexts above and it ought to be clear by now that these are the things scientists are

---

[266] The term "real" is used quite loosely. In most contexts real refers to Bhaskar's domain of the real, i.e. where mechanisms operate, whilst real can also refer to the world, seen and unseen, empirical and non-empirical and concrete and abstract. Real can also be used as denoting the opposite of fictitious.

seeking. They are fully situated in the domain of the real and by their actions they generate events—though not always perceivable, and certainly not always perceivable by persons. Mechanisms are enduring and they have a tendency to act in a certain way (Bhaskar, 1975, p. 49). Enduring means that they continue to exist, independent of our observation of the events they generate, and even when they are not acting or their acting is confounded by something else (as is normally the case in open systems).

Bhaskar (1975, p. 49) says that the non-empirical interpretation of causal laws (namely, that it applies in open systems) leads to the concept of a causal agent.[267] To be a causal agent means to have causal powers: *"On this interpretation then the generative mechanisms of nature exist as the causal power of things"* (Bhaskar, 1975, p. 50). Rather than speaking of the causal power of a thing (which is the generative mechanism of a thing), Bhaskar (1975, p. 50) speaks of tendencies because power means it can be exercised or not whilst tendency means that something can be exercised *"... without being realized or manifest in any particular outcome."* Thus, what we normally call a law should be called a tendency and it expresses the causal power of things. If I understand Bhaskar correctly, then a generative mechanism is just this tendency of a thing. In the following quote he explains the link between power and tendency and defines "tendency":

> *For tendencies are powers which may be exercised without being fulfilled or actualized (as well as being fulfilled or actualized unperceived by men). It is by reference not just to the enduring powers but the unrealized activities or unmanifest (or incompletely manifest) actions of things that the phenomena of the world are explained. It is the idea of continuing activity as distinct from that of enduring power that the concept of tendency is designed to capture. In the concept of tendency, the concept of power is thus literally dynamized or set in motion* (Bhaskar, 1975, p. 50).

Although the concept of tendency was discussed above (see paragraph 7.3.3.4), an important corollary needs to be pointed out here. In a sense, power is a static concept. Although it is active when exercised and in this sense dynamic, it is either there (acting) or not. However, by combining power and tendency Bhaskar constructs a dynamic concept: tendencies are always active and it must be distinguished from "enduring power." Thus, a law should be seen as this always active something.[268] Does this mean that a mechanism is always manifest or perceivable? We must answer negatively because it is only in a closed system that the mechanism (in the domain of the real) is perceivable (domain of the empirical) in events (domain of the actual).

---

[267] How?

[268] By calling it something and not thing I try to avoid reifying law, tendency or power.

Generative mechanisms, I have argued, must be analysed as the ways of acting of things;[269] *and their operations must be understood in terms of the exercise of tendencies and causal powers. Tendencies may be possessed unexercised, exercised unrealized, and realized unperceived (or undetected) by men* (Bhaskar, 1975, p. 184).

In the quote above, Bhaskar says that tendencies may be possessed unexercised. This means that a thing has the tendency but it is not executed: the thing possesses the tendency. In terms of powers, the statement implies that the power is "switched off," hence, latent.

Bhaskar (1975, p. 229) makes a distinction between two uses of tendency. According to him tendency$_1$ refers to his usage in most of RST. Tendency$_1$ indicates normic statements, i.e. tendencies in open (and closed) systems or transfactual statements as powers that can be exercised unrealised (Bhaskar, 1975, p. 229). Tendency$_2$ refers to what Bhaskar calls "enduring orientations." Tendency$_2$ signifies that typical action that makes the mechanism unique. It is, consequently, more than the power and expresses a thing's propensity to act in a certain way. Bhaskar (1975, p. 230) uses a psychological example: all humans possess the power to steal but only kleptomaniacs possess the tendency.

Thus, tendency$_2$ is closer to the concept of tendency as "continuously active": the kleptomaniac is defined by tendency$_2$. It is not a latent power that gets switched on or off but forms a defining and ontological characteristic of a thing. However, it is also tendency$_1$, namely, a normic statement about kleptomaniacs' behaviour. Thus tendency$_1$ statements characterise tendencies as normic (as a species of nomic statements) whilst tendency$_2$ statements express the enduring orientation of a thing.

In conclusion, let me digress slightly and reflect on what the kleptomania example Bhaskar uses implies. It must be noted that Bhaskar uses an example from psychology and not from physics to illustrate the concept of tendency. Despite Bhaskar's insistence that social/psychological phenomena cannot be studied in closed systems, he points to a perfectly good psychological example of a law. How do we know that kleptomania describes a law-like propensity to behave in a certain way if we cannot construct a closed system? For the sake of an argument let us assume we would like to study the behavioural tendencies of kleptomania in an experimental way. An experiment needs to control other influences, therefore, the only varying factor needs to be a situation or treatment where the behaviour of kleptomania can be triggered. One also would need a control group similar to the experimental group except for the characteristic of kleptomania. Thus, an experimental situation would be to have a number of kleptomaniacs with certain biographical characteristics (random selection of gender, age, nationality, etc.) and a number of persons without

---

[269] See Bhaskar (1975, pp. 52, 202).

the kleptomaniac characteristic having similar randomly picked biographical characteristics. Both groups are exposed to the same shop and note of their behaviour is taken. If we found that the kleptomaniacs stole articles and the control group did not what would we have learned? That persons with kleptomaniac characteristics tend to steal? But we knew this from the start and the problem with this contrived experiment is certainly how we identified kleptomaniacs in the first instance!

Presumably, to construct this experiment, we would have identified persons that conformed to certain criteria for kleptomania at the start. They exhibit certain behavioural characteristics that qualified them as kleptomaniacs. One can assume that psychologists and psychiatrists came up with the qualifying criteria by identifying similar patterns of behaviour some of their patients exhibited. Thus, an observed invariance established a pattern and these invariances where not observed in closed systems but in open social/psychological systems. One can imagine that a number of persons (such as the patient, family, shopkeepers and so on) attested to the pattern of behaviour. A qualifying element probably was the exposure to a shopping environment but in open systems. The person was, therefore, observed in various circumstances taking articles in various shopping environments as opposed to stealing articles from friends' homes.

This situation, of establishing behavioural "laws" or patterns, differs from an experimental situation, which we have seen in the example above, is absurd. How would one contrive an experimental situation with internally complex persons without eliciting a host of reactions not appropriate to the test situation? Consequently, the ability of persons to react and not just act militates against the possibility of experimental control, not to mention the ethical dilemmas it creates. Thus, this leaves the observer of human behaviour with quasi-experimental situations where the "treatment" presents itself in natural (open) situations and subtractive inferences need to be made.

(A related problem is whether one would define the psychological sphere as fundamentally open based on internal complexity and/or a linguistic ontology. I think that semi/quasi closure is possible, not full-closure. In contrast to social phenomena, which, as we shall see, are probably fundamentally open, not due to internal complexity but rather the reciprocal ontological relationship between society and agents, psychological phenomena depend on internal complexity. Remember that Bhaskar indicated three characteristics of a closed system, namely, isolation, atomicity, and additivity. Psychological phenomena are internally complex, hence, atomicity cannot be acquired even if one succeeds in isolating the experimental system. One might argue that it is due to internal complexity that agents cannot be isolated.)

The next question is whether this situation does not endorse a positivist/empiricist view of socio-psychological science. If one restricts the invariances perceived to the levels of the empirical and actual then the answer must be affirmative. However, the transcendental realist can and does go further than the positivist, namely, to pose a level of mechanisms that must be explored. Thus, the invariances or patterns perceived (on the level of the empirical and actual) points to a deeper level of reality that causes and not merely defines kleptomania. Interestingly, the dialectical process between the taxonomical and explanatory is illustrated quite well in the problem of kleptomania I am analysing. The taxonomical, i.e. what kleptomania is can in the end only be realised when deeper structures have been discovered. On the face of it, kleptomania is not captured by the pattern of invariances, namely, stealing in shops. There is a crucial difference between the kleptomaniac (having a tendency to steal in shops but only shops) and the petty thief or the hungry street-child. This difference defines kleptomania and points to the underlying mechanism involved.

So to turn the transcendental argument against Bhaskar so to speak: given that kleptomania can be captured by a real definition and indeed was (by a process of productive science), what are the conditions making psychological science possible? Is it the possibility of (semi)closed systems, or the possibility of deep explanation? In fact, this question in connection with psychological science focuses the transcendental one for natural science as well: what are the conditions for science?

7.3.5.3   Stratification

The transcendental analysis of experimentation established that events and experience cannot account for the behaviour of phenomena. It can only be accounted for by a mechanism underlying events and this fact establishes stratification (Bhaskar, 1975, p. 170). Stratification in nature involves a process of continuous discovery of deeper levels of mechanisms, and, *"Without this concept the stratification of science must appear as a kind of historical accident…"* (Bhaskar, 1975, p. 170). Stratification implies that fundamental explanations are unlikely (Bhaskar, 1975, p. 171) because as soon as one level succumbs its mechanism, the next stratum comes under focus (Bhaskar, 1975, p. 169). Table 3 provides an illustration of the levels lying on top of each other from the level of chemical bonds to the level of subatomic structure (Bhaskar, 1975, p. 169). Stratification also illustrates the process of scientific discovery: an invariance is noticed, a model for the mechanism is found, its reality is established, and then the focus turns to the next and deeper stratum (Bhaskar, 1975, p. 166).

Table 3 Stratification in nature (Bhaskar, 1975, p. 169)

Stratum I	$2Na + 2HCl = 2NaCl + H_2$ explained by	
Stratum II	theory of atomic number and valency explained by	Mechanism 1
Stratum III	theory of electrons and atomic structure explained by	Mechanism 2
Stratum IV	[competing theories of subatomic structure]	[Mechanism 3]

The stratification, according to this argument, is true of the objective world or the intransitive domain. Our knowledge (transitive domain) corresponds or ought to correspond to the objective stratification but does not define it in a idealistic or constructionist way; if our knowledge is wrong or ceases to exist the world with its levels will still stand firm (Bhaskar, 1975, p. 170). Transcendental realism sustains the intransitivity of the world: *"… in transition from knowledge of any one stratum to the knowledge of the next, knowledge of three levels of the objective world order is progressively obtained: of relations between events, of casual laws and of natural kinds"* (Bhaskar, 1975, p. 171). Two aspects must be noted from this quote: (a) a distinction between *knowledge* of strata and *strata* must be made, and (b) science progresses to knowledge of strata in a three-step process.

Firstly, knowledge of strata implies that we as scientists produce knowledge and it may well be that our knowledge of strata does not correspond to actual strata. However, the implication of Transcendental Realism is that strata exist anyway, independent of our knowledge of them (Bhaskar, 1975, p. 171).

Secondly, the three-step progression of science in order to discover the way reality is stratified involves (a) starting with relations between events. Bhaskar is careful not to say "constant conjunction" because of its established pejorative connotation. However, this is where we all start: by observing "invariances"! (b) Causal laws are accessed empirically in closed systems and this knowledge thus follows from (a). Knowledge of laws is linked to knowledge of mechanisms. The former gives us access to the level of the real. (c) Knowledge of natural kinds enables us to know what a thing is. This is close in meaning to tendency$_2$ discussed above (see paragraph 7.3.5.2). The link between tendency$_2$ and natural kinds becomes clear when Bhaskar explains natural kinds as *one* type of necessity.

192

Bhaskar (1975, p. 171) distinguishes three types of necessity, namely, (a) connection by a mechanism (b) natural necessity and (c) natural kinds.[270] Connection by a mechanism means that events (if x then y) are connected by a mechanism: it is not something the human mind has to contribute, i.e. a Humean habit that connects events. Natural necessity refers to what a law expresses. This is the operation of a mechanism. Thus, (b) presupposes (a). Connection by a mechanism merely states the location of necessity whilst natural necessity expresses the working of the mechanism. By extension the natural kind necessity is that what defines a thing's essence: if one removes that element, whether it is its properties or powers, then the thing ceases to exist as that thing. The element defines its nature or what kind of thing it is. Necessity (b) expresses the fact that a mechanism operates in open and closed systems while necessity (c) says that the removal of that particular mechanism will let the thing cease to be the particular thing it is. Accordingly, remove the characteristic tendency from a kleptomaniac—not the tendency to steal—and he/she becomes a mere petty thief.

7.3.6 Reality as discovered: the process of science

The process of science has systematically been uncovered in the discussion above: (a) a regularity is identified, (b) an explanation is created and (c) *"the reality of the entities and processes postulated in the explanation …"* (Bhaskar, 1975, p. 15) is checked. The first step indicates a commonality with empiricism and its positivistic variants. A realist science explains the regularities but then checks it empirically. The empirical check is aimed at determining the reality of postulated processes and entities. This is not the process of positivist science because there can be no unobserved entities, mechanisms, structures or powers underlying observed reality.

Where do positivism and other views of science fit into this scheme? Bhaskar's model of the process is reflected in **Figure 1** below. Classical empiricism and Transcendental Idealism both have *empirical realism* as implicit ontology, i.e. restricting reality to what is experienced.[271] The empiricist typically stops at the observation of the regularity and regards the observed regularity as the actual law.[272] The transcendental realist realises that the constant pattern of events is just that—an

---

[270] I do not follow the distinction or at least what the difference between (a) and (b) is.

[271] This reality may even be independent from the knowing subject.

[272] Referring to **Figure 1** Bhaskar (1975, p. 15) says: *"Transcendental realism differs from empirical realism in interpreting (1) as the invariance of an (experimentally produced) result rather than a regularity; and from Transcendental Idealism in allowing the possibility that what is imagined in (2) need not be imaginary but may be (and come to be known as) real."* My question is if the empirical realist regards phase 1 as the result of a closed situation, how does this differ from the experiment the transcendental realist does in phase 3? Is this not mere smoke-and-mirror from Bhaskar to deflect our attention from the so-called illegitimate empiricist move in phase 1? If the positivist identifies invariances it is illegitimate; if the transcendental realist does it, it is legitimate—it just depends in which so-called phase one does it.

observed *invariance*. Behind it might be a law, mechanism or process explaining it (if it is a necessary regularity and not a contingent one). However, if the scientific process stops at the explanation then it reflects a transcendental idealist orientation. A distinction is made between imaginary and imagined models or mechanisms. Transcendental idealism holds the models to be imaginary, whilst Transcendental Realism holds it to be imagined and thus possibly real depending on the next step in the scientific process (Bhaskar, 1975, p. 146). Therefore, only when the hypothesised elements of the explanatory model are empirically tested to determine their ontological status can we speak of a transcendental realist orientation.
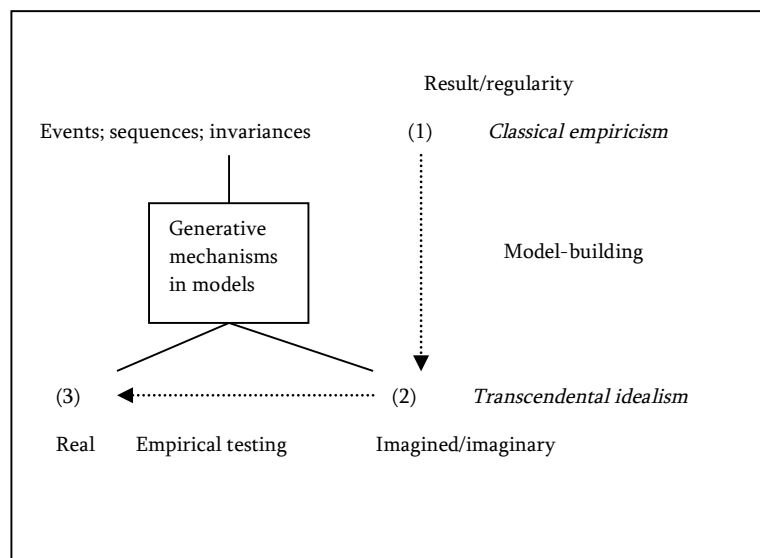
Figure 1 The logic of scientific discovery (Bhaskar, 1975, p. 15)

7.3.6.1   Identification of regularities

The actualist account of laws presumes that laws can be identified when they are perceived in actual or possible events that are conjoined in some way (Bhaskar, 1975, p. 64). Laws are viewed by the actualist as empirical invariances or *universal empirical generalisations* (Bhaskar, 1975, p. 246). As we have seen the transcendental realist account of laws assumes that laws are non-empirical, i.e. they signify something about the working of actual things. The law expresses a principle of behaviour which can be possessed unexercised, exercised unrealised, and realised unperceived (Bhaskar, 1975, p. 18). As we have seen as well, law and event are ontologically distinct—if this were not so then people will be able to thwart laws or trigger them. It is important to realise that laws are only exhibited by empirical events as a constant conjunction in a *closed system*. Hence, laws either do not apply in open systems since they are restricted to a constant conjunction of events or they are ontologically distinct from the events they cause (if they do apply in open systems). Because they are ontologically distinct from events and non-empirical, they are

194

universal (Bhaskar, 1975, p. 14). To reiterate: laws are universal, i.e. they apply in open systems, because they are not empirical—empirical realism regards laws as universal and empirical, which they cannot be.

If laws are not universal empirical generalisations what does Bhaskar (1975, p. 145) mean when he says that Transcendental Realism distinguishes itself from empiricism *"…by interpreting the first stage of the dialectic as the invariance of a **result** rather than that of a **regularity**"* (see Figure 1)? The "dialectic" refers to the three-step process of science and the first step refers to invariance identification. However, this is invariance identification is not a regularity identification: this is what the empirical realist does, namely, identifying the pattern of invariance as an empirical regularity. The concept of "empirical regularity" expresses the concept of a universal empirical law, which we have seen, cannot be true. We only obtain an invariance (which the positivist misidentifies as a regularity) as the result of an experiment, namely, within a closed system. A closed system, per definition, is not universal. This is the mistake the empirical realist makes: regarding the invariance as a universal empirical regularity. Thus, the whole of reality ought to be closed if the invariance were a regularity: *"It is of course precisely the ubiquity of open systems in nature that makes necessary an experimental rather than a merely empirical science"* (Bhaskar, 1975, p. 91).

Therefore, the ontology of experimental science is transcendental realist, that of empirical science, empirical realist. Practically, this means that when the transcendental realist identifies invariances she is doing empirical work that does not rest satisfied with the constant conjunction found in the experiment; the next two steps still need to be completed. The positivist working from an implicit empirical realist stance regards phase one as sufficient to establish a regularity.[273]

7.3.6.2   Model construction

The second step in the scientific process is model construction. As was seen above, Transcendental Idealism stops at this phase, but only Transcendental Realism proceeds to the last phase to uncover the mechanisms underlying that what was discovered in the first phase. This is why models are, for the transcendental realist, imagined rather than imaginary. In this section Bhaskar's (1975) adaptation and criticism of Campbell's (1957) use of analogy in science will be considered, followed by an analysis of necessity and short description of the transcendental realist process of science.

---

[273] The positivist/empiricist influence on psychological experimental work probably had the adverse effect that is often lamented, namely, that experimental research is devoid of theoretical underpinning. By ending with constant conjunctions not much space is left for theoretical explanations. However, it ought to be clear that now a days the structure of empirical research is such that it departs from explicit problems within explanatory frameworks.

It will become clear that creative imagination plays a role in science and that it is necessary for explaining invariances: a pattern of events is thus a pattern not by virtue of the empiricist link the human mind makes, but, strangely, by virtue of another sort of human contribution, namely, imaginative models. On the one hand, the epistemic fallacy pinpoints the illegitimate human contribution to linking events, and on the other hand, Transcendental Realism points out the legitimate human contribution. Of course, if we remained with creative models the process of science would be transcendental idealist or constructionist, but the next step will be discussed in the following section (paragraph 7.3.6.3).

(a)   Campbell's analogy phase

Bhaskar (1975, pp. 148-163) discusses Campbell's (1957) view of the practice of science. According to Campbell (1957) the task of science is, *inter alia,* to construct analogies for those aspects of a theory that refer to non-empirical entities (Bhaskar, 1975, p. 152). The practice of science as a deductive enterprise cannot hold: Campbell criticises the view of theories as axiomatic systems that operate deductively. A deductive system cannot account for novel predictions and for new discoveries.[274] Theories describe reality but contain aspects that cannot at a particular stage be linked to empirical reality. Theoretical entities are positioned within explanatory models that explain them. The proposed way to make them intelligible is to construct analogies using known phenomena. By means of the analogical phenomenon the theoretical entity can be understood.

Bhaskar interprets Campbell's use of analogy in terms of the necessary connection involved between the antecedent and the consequent of a law. According to the empiricist there is no necessary connection involved, only a conjunction of events. For the realist the necessary connection is real but how should one understand, what Bhaskar (1975, p. 149) calls, the surplus-element involved in ascribing some, but not other sequences of events as necessary? As discussed in a previous chapter it was seen that necessity, or the concept of a necessary connection between events, is a matter of psychological habit. Also, Hume do not endorse an objective criterion for distinguishing between a necessary and contingent sequence of events (Bhaskar, 1975, p. 149)

The surplus-element in Campbell's case is analogy[275]. If we have a law stating "if x then y," then the necessity of the law (i.e., why the law connects x and y) can be

---

[274] Is this true—what about the deduction made on grounds of the periodic table?

[275] *"On this view the surplus-element just is the model. Thus what distinguishes Boyle's law from a merely accidental generalization is, according to Campbell, the corpuscularian model informing the kinetic theory of gases. By means of this model gas molecules are imagined to be, in certain respects, like billiard balls bouncing off each other and exchanging their momentum by impact. And it is in our prior understanding of this that the necessity of the gas laws ultimately lies. Notice that for Campbell it is not the mere availability of a theory or even the organization that the theory makes possible (e.g. the fact that Boyle's law, Charles' law and Graham's law are all deductive*

made understandable by an analogy or a model. Previous knowledge is required for understanding the new law and its explanation in the theory. The model/analogy likens the new with old and in the similarities and differences, the new law and the phenomena it governs, are understood.

$$T_a$$

Deduction   Analogy

$$E_a \qquad\qquad E_b$$
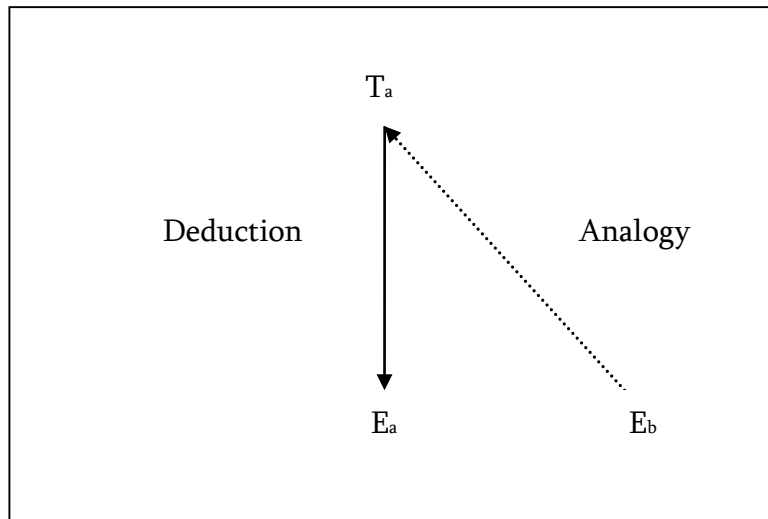
Figure 2 Campbell's analogy (Bhaskar, 1975, p. 154)

In Figure 2 Campbell's theory is presented graphically. T_a is the theory that explains phenomenon E_a and that is deduced from T_a. Phenomenon E_b illustrates the relationship between T_a and E_a by means of its analogical relationship with the theory: *"Explanation thus involves, centrally, the substitution of a real or empirical relationship for an unreal or theoretical one"* (Bhaskar, 1975, p. 154). According to Bhaskar (1975, p. 154), Campbell is still stuck in an empiricist ontology, because the theoretical relationship can never be known to be real. Campbell, consequently, concedes empiricism the point that only the observable is real.

The analogical relationship can be illustrated with a simplistic example. A scientist could have taken the solar system (E_b or the observable phenomenon) as an analogy for the rotation of electrons around the nucleus. The latter, or E_a, is the supposedly non-observable phenomenon deduced from a theory about the constitution of matter. In a theory filled with unobservable processes and entities, E_a is one such entity forming part of an explanatory conceptual structure.

Despite Campbell's unwitting acceptance of empiricist ontology, the use of analogy, modelling, and as Bhaskar puts it, imagination, illustrates the second phase

---

consequences of the kinetic theory) but the interpretation of the theory in a model that accounts for the necessity of the law the theory explains" (Bhaskar, 1975, p. 153).

197

of scientific praxis very well. The contribution of the human imagination and mind forms an integral part of doing science but one cannot, like the transcendental idealist, stop the process here and grant the empiricist her one-dimensional view of reality.[276]

How does Bhaskar move forward? Manoeuvres, such as emphasising the use of metaphor in science or characterising science as metaphoric, are usually used to avoid the empiricist embarrassment of unobservable or theoretical entities. Bhaskar (1975, p. 157) puts the following question to Campbell's theory: *"Can it sustain the idea of the applicability of the concept in question, viz. that of necessary connection, in a world without men?"* His answer is that one cannot distinguish in Campbell's case between a necessary or accidental sequence of events, *"independent of men"* (p. 157). What does this mean? The next section will explore this issue briefly.

(b)　　Necessity

The concept of necessity has been encountered above (see p. 193) but it will be worthwhile to repeat it here in this context. First of all, the ability to distinguish between accidental and necessary sequences of events is what is required for a science to be possible and for our ability to ascribe laws to some sequences of events but not to others. Put in another way, according to Bhaskar (1975, p. 26), a conception of a law-governed world independent of men is necessary to understand science. Science is not as empiricism and Transcendental Idealism imagines it to be. Underlying both is a particular ontological view, namely, empirical realism, which as we have seen, holds empirical experiences of reality to be real. They, consequently, make an understanding of reality and the laws that govern it dependent on (wo)men. This dependency is the epistemic fallacy discussed above (p. 173) that belies the anthropocentrism of classical philosophy of science (Bhaskar, 1975, p. 34):

> *If the bounds of the real and the empirical are co-extensive then of course any surplus-element which the transcendental idealist finds in the analysis of law-like statements cannot reflect a real difference between necessary and accidental sequences of events. It merely reflects a difference in men's attitude to them. Saying that light travels in straight lines ceases then to express a proposition about the world; it expresses instead a proposition about the way men understand it. Structure becomes a function of human needs; it is denied a place in the world of things* (Bhaskar, 1975, p. 28).

---

[276] *"How does Campbell's theory fare as a response to the challenge of radical empiricism? According to it, the surplus-element in the analysis of law-like statements is the model at the heart of the theory that explains it. But for Campbell the model cannot prompt questions about the reality of the abstract entities and processes postulated in the theory. For theoretical entities are by definition unperceivable and hence, given the fundamental equation of empiricist ontology, viz, real = empirical, cannot exist. Models function then not as knowledge-extending but as essentially pragmatic devices, servicing the needs of the understanding. Theory involves a journey from one set of experiences"* (Bhaskar, 1975, p. 156).

In the case of the empiricist the difference between a necessary and accidental sequence also lies with the understanding of men. Therefore, if humans were present and interpreted the observed sequence of events, they probably would have, according to a (non-objective) criterion, indicated some events as necessary and some as contingent.[277] Those events that exhibit a constant conjunction can be subsumed under a statement of a law and said to be necessary (by virtue of course of the constant conjunction and not a surplus element such as a phenomenon called a "necessary connection").

If humans were not present, how would that same sequence of events be classified? For the empirical realists[278] there can be no criterion: no objective grounds exist for distinguishing between a necessary and contingent sequence of events (Bhaskar, 1975, p. 149). To say that a sequence of events is necessary one needs (a) a closure supported by (b) a satisfied *ceteris paribus* clause, (c) an observable constant conjunction of events, all supported by the assumption of (d) regularity determinism (i.e., invariance of events that can be expressed by statements like "if x then y"). At least condition (c) is necessary for ascribing law-like statements to events (Bhaskar, 1975, p. 29). By now it ought to be clear that condition (c) depends on human beings, consequently, it seems that there are no objective grounds for distinguishing between law-like and non-law like events.[279]

But this is simply not true according to the transcendental realist: there are objective grounds and it lies within the intransitive dimension. In a world without human beings laws will continue to operate because they describe the actions of *enduring mechanisms* and structures in open systems. The *enduring mechanisms* constitute Bhaskar's surplus-element. Neither the bare conjunction of events as in actualism, nor models as in the case of Campbell (1957), establish necessity apart from humans:

---

[277] A response to the challenge of distinguishing between necessary and accidental sequences is to locate the surplus element in explanation or theory (Campbell does it with the concept of a model). If deducibility is a criterion for an explanation then it fails because a number of alternatives can be deduced from the theoretical structure and not only the particular law one is interested in (Bhaskar, 1975, p. 150). If predictability is a criterion it also fails because an accidental law-like statement can give correct predictions *"… as long as the conditions that account for it persist"* (Bhaskar, 1975, p. 151). Induction also does provide an adequate criterion because for the same reason as the latter, accidental generalisations may hold in any case.

[278] Whereby I mean transcendental idealists and radical empiricists including those of the positivist variety.

[279] *"The Campbellian can at best talk of a nomically necessary statement; he cannot talk of a nomically necessary sequence"* (Bhaskar, 1975, p. 157). For a definition of "nomic" see Footnote 248. The Campbellian can speak thus of law-like statements because the model provides legitimation for the connection and the model and statements are work of men. He cannot speak of necessary sequences because both model and statement disappear when there are no men! So we still do not have anything apart from the contribution of human beings that classifies an event as necessary.

199

only real mechanisms, the working of which is described by laws, establish necessity objectively.

(c)   The transcendental realist process of science

Bhaskar proposed a schematic representation of Campbell's theoretical process and has adapted it to avoid the empiricist/idealist traps. The transcendental realist view of modelling is explicated in Figure 3.
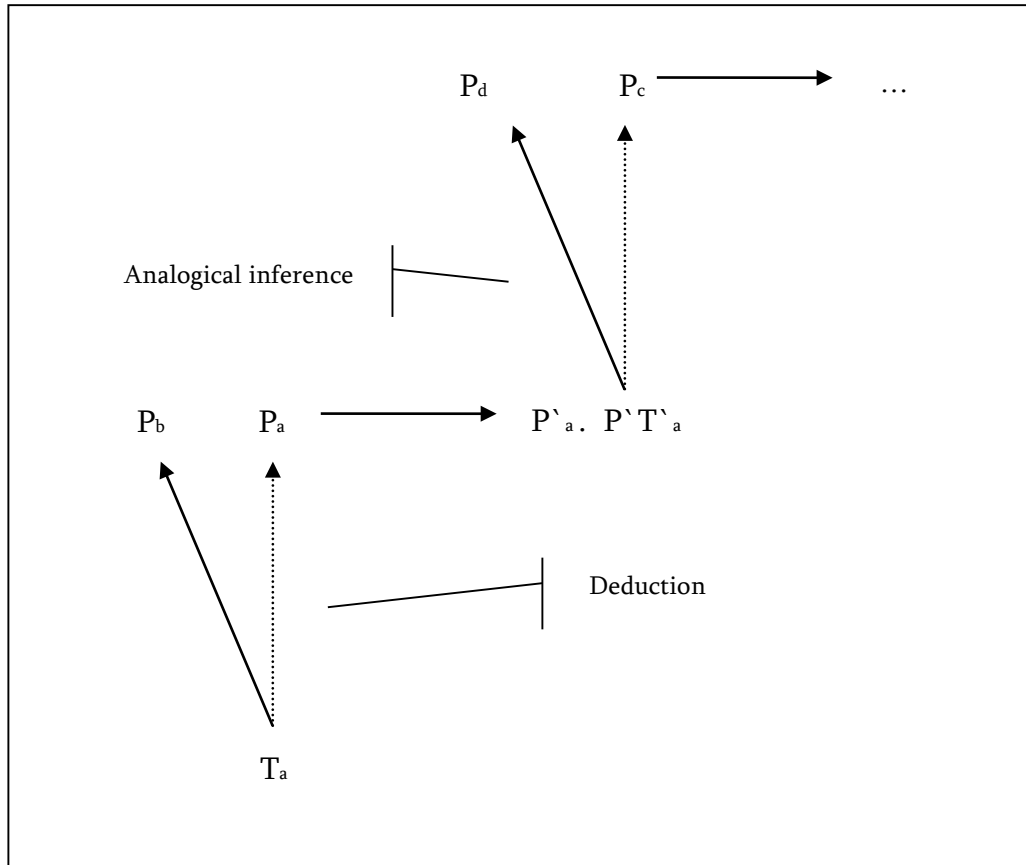
Figure 3 Dynamic realist expansion of analogical reasoning (Adapted from Bhaskar, 1975, p. 159)

I have taken the liberty to modify Bhaskar's schema somewhat and make it intuitively understandable. The process of theorising moves from left to right and follows steps 1, 2 and 3. A phenomenon P_a is deduced from theory T_a. This phenomenon could be unobservable or theoretical but in substance unknown except for the theoretical explication. Analogical reasoning provides a model to understand the phenomenon by using the already known and discovered phenomenon P_b that now is part of the body of scientific knowledge. As soon as the model or analogy is constructed, the process for evaluating and changing P_a in the light of experimentation and theoretical understanding starts. Thus, P_a becomes $P\grave{}_a$ and is incorporated in the theory T_a which becomes $T\grave{}_a$. From the incorporated $P\grave{}_a$ in $T\grave{}_a$ new phenomena can be deduced and the process starts again.

7.3.6.3   Establishing the reality of theoretical entities

The main question is how the scientist moves from a theoretical entity to a real one without falling into the empirical realist trap of searching for invariances in closed systems and reducing the real to the experienced. In paragraph 7.3.3.4 laws were discussed and the three criteria of establishing a law were pointed out. These correspond to the three levels of scientific progression which distinguishes radical empiricism, Transcendental Idealism and Transcendental Realism (Bhaskar, 1975, p. 166). To reiterate, at the first level the regularity is defined and the empiricist will stop there. The joining of events will be sufficient to establish a law but we know this will not do because of the problems of actualism discussed above (cf. paragraph 7.3.4.2). Transcendental idealism will include the criterion of radical empiricism but will, in a Kantian sense, require model building postulating a mechanism that accounts for the observation of invariance. However, as we have seen, its underlying empirical realism will necessitate a collapse of reality and experience, thus, making the regularity dependent on human cognition. Only in Transcendental Realism will the independent existence of the enduring mechanism be postulated so that the distinction between accidental and necessary sequences of events is based on something independent of human interpretation.[280]

The transcendental realist will *"… demand that models be tested not just for plausibility but for truth; i.e. for their adequacy in correctly describing the real generative mechanism at work …"* (Bhaskar, 1975, p. 166). The scientist tests the models for truth in the following way:

> Given the identification of some prima facie non-random pattern in nature or protolaw the scientist thus builds up ideas of various plausible mechanism by creative employment of his imagination … and subjects these ideas to rigorous **theoretical criticism** and **empirical test**[281] (Bhaskar, 1975, p. 166).

The process of moving the model into the domain of the real is also the process of knowledge formation: *"For the transcendental realist the model has a relationship with its subject as well as with its source. And it is within the nexus formed by this double articulation that new knowledge is produced"* (Bhaskar, 1975, pp. 166-167).

Theoretical criticism and empirical testing[282] are the tools the scientist has for testing her theory. It corresponds to testing for the *adequacy* or plausibility of the mechanisms proposed by the model of the theory, and the *truth* or reality of the proposed mechanisms. Criticism and testing also corresponds roughly to the

---

[280] This is the question: how does TR ensure this?

[281] Emphasis mine.

[282] How does this differ from the empiricist's testing?

transitive and intransitive domains: theoretical work based on previous theories and knowledge lies in the domain of socially produced knowledge of intransitive things.

(a)   Theoretical work

Firstly, criticism is *work*[283] done on the transitive level and it is open to error and revision. It is a social activity done in the community of scientists and open to other researchers. It is also work done within the tradition of related theories. It is dependent on related work and the plausibility of a mechanism can be determined in relation to other theories. If a model of a mechanism is proposed by creative imagination it is not unbridled flights of fancy because it presupposes previous concepts and theories of similar or related models/ideas. In a restricted manner, concepts originate in pre-existing knowledge and, in this way, place a boundary on plausibility. On a transitive level the mechanisms can be judged to be plausible or implausible, and adequate or inadequate. In the light of known mechanisms and other postulated mechanisms the one under consideration can be rendered plausible. It is a rational activity and, therefore, conforms to the usual criteria for argumentation, such as, non-contradiction and so on, but as Bhaskar (1975, p. 167) says, there are no philosophical criteria for determining when a postulated mechanism is plausible or adequate. It can only be rendered plausible in the context of a specific science.

Bhaskar (1975, p. 178) distinguishes between empirical and conceptual work in science. First, it is *work*, i.e. it is not freely available things that merely reflect or mirror in the scientific mind and transform themselves into knowledge. Work implies that something needs to be worked for: there is a process of production using materials and some effort goes into this work. Hence, the necessity of scientific training for scientific work is hereby emphasised. Training is required because scientific work is skilled work; it requires skill from the scientist on at least two fronts: the empirical and conceptual. Consequently, the process of scientific discovery involves conceptual and empirical work. It must be noted from the outset that what is regarded as empirical work does not lead to empirical realism because empirical work and theoretical work is intimately interwoven. For instance, to produce the object of scientific investigation, one has to have an idea or concept of what it is one is producing.[284]

(b)   Empirical work

Empirical work consists of skilled labour. We have encountered experimental work previously (paragraph 7.3.2.2 above). An important aspect of empirical work is

---

[283] Work is a loaded term, associated with *production*. Bhaskar theoretical background includes a strong dose of Marxist theory, which I do not explore in this study. However, some of his concepts can be clarified against their Marxist background (Creaven, 2002; Kaidesoja, 2009; Norrie, 2004; O'Boyle & McDonough, 2011, p. 4; Roberts, 1999).

[284] How is this not Kantian?

rendering objects "visible"[285] to the scientist (which is what I am concerned with in this thesis): empirical work aims *"… to produce the object, i.e. to render the thing or behaviour directly accessible to the scientist's senses (so that it becomes the possible object of an act of immediate demonstrative reference)"* (Bhaskar, 1975, p. 178). However, rendering objects accessible[286] to the scientist is never done for its own sake; it is done to provide a qualitative description of a phenomenon and its behaviour. The full scientific process requires qualitative description in any case—description is required for explicating mechanisms within various strata.

Qualitative description according to Bhaskar (1975, p. 178) involves both the conceptual and empirical components and we focus, for the moment, on the empirical element. In order to be described, the object (or phenomenon) needs to be accessible to the scientist and accessibility starts with a theoretical conceptualisation of the thing in mind (Bhaskar, 1975, p. 179). A thing, object or phenomenon can be theoretical in two senses.

When does a theoretical entity cease to be a theoretical and be said to be real? Bhaskar (1975, p. 179) makes a distinction between two meanings of theoretical, namely, (a) referring to an entity which probably does not exist, i.e. it is hypothetical; and (b) an entity which we have reason to believe exists but cannot be observed. If an entity is included in a theory and it is theoretical in sense (b), does this mean it does not exist or that we cannot know that it exists? Bhaskar (1975, p. 179) says that we can know that it exists through the *"perception of its effects."* It can thus be observed indirectly through its effects on other things, such as the effect of the magnetic field on the compass needle: we cannot observe the field directly by means of direct or sense-extending devices but only by means of its effect. Bhaskar lays down an observational criterion of reality. However, he (1975, p. 179) does not regard the direct perception of a thing as necessary to establish its reality: if this were so then *"… our knowledge would necessarily be confined to the domain of observable things … ."* To say that the domain of observable things cannot be equated to our knowledge does not retract from the importance of the observational criterion. We do have knowledge of unobservable things through the observation of their effects. Thus, to say, as Bhaskar does, that we have a perceptual and causal criterion for the reality of things merely shifts the attention away from what counts as final criterion for reality, namely, observation.[287]

Therefore, to make an object accessible it has to be (a) perceivable or (b) detectable. As Bhaskar said we have perceptual and causal criteria for the reality of

---

[285] The import of "visible" will be discussed below.

[286] The main question is how does this step differ from the empiricist's project—Popper said the empirical umbilical cord can never be snapped so how does realism differ in the end?

[287] How do we distinguish this observational criterion from a positivistic one?

objects. The perceptual criterion involves direct or indirect perception. Indirect perception involves sense-extending means such as microscopes or other devices rendering objects accessible.[288] It may well be that an object is accessible to the scientist (such as on an x-ray) but not recognised for what it is. Recognition requires *conceptual* work and demonstration of an object, *practical* work (Bhaskar, 1975, p. 178).

The second criterion of causality involves a detection task. Things that cannot be (in)directly perceived could be detected by means of their effects on other material things around them. As seen above (p. 203), the standard example is a compass (or iron filings) and the effect the magnetic field has on it. In this detection paradigm (which, of course, still requires a perceptual criterion by extension) things are theoretical$_2$ by virtue of their effects. These things could be concrete (such as atoms perceivable under an electron microscope) or non-concrete such as fields (e.g., magnetic fields) (Bhaskar, 1975, pp. 180, 181). Bhaskar views fields as things capable of action (thus, they must be non-atomistic[289] and not ultimate[290]).

7.3.6.4 The tasks of science: taxonomic and explanatory

(a) Nominal/real essence/definition[291]

One can distinguish between a nominal essence and real essence. A nominal essence of a thing refers to its properties. It has to show those properties in order to be known as that particular thing (Bhaskar, 1975, p. 209). A real essence is that structure of a thing that causes its typical behaviour and properties (as specified by its nominal essence) (Bhaskar, 1975, p. 209). According to Bhaskar the sciences aim to explain properties by identifying the underlying structures. Consequently, the

---

[288] Of course, visual perception or perceptibility by means of certain senses is contingent on theory. Bhaskar (1975, p. 179) refers to electron microscopy where the sense extending equipment depends on theoretical (and practical) work on the behaviour of subatomic particles.

[289] *"About such entities all the scientist knows is their powers. It always remains possible that he will be able to achieve a qualitative description of them, and he must strive to do so. On the other hand, it is also possible that such entities are their powers. The scientist can never dogmatically eliminate one of these alternatives in advance. If there is a frontier to possible knowledge of the world the scientist can never know when he has reached it. **But whatever is responsible for the world as manifest must possess causal powers which are continually being exercised; it must be co-extensive with space and continuous with time. It must be structured and complex; it cannot be atomistic or event-like.** The concept of a field of potential seems closest to meeting these requirements. However it seems to me there is no reason in principle why there should not be strata of fields (of perhaps radically different kinds), forever unknown to us. It should be noted that only the identification, not the existence, of fields depends upon the existence of material things in general. Here again the order of dependence in being is opposite to the order of dependence of our knowledge of being. The ontological order is distinct from the epistemic one"* (Bhaskar, 1975, pp. 180-181) (my emphasis).

[290] They are not ultimate things such as atoms or electrons are non-ultimate, thereby, keeping the possibility of new strata open. A scientist cannot say that he or she has reached the final explanation or level of reality.

[291] Nominal essence and nominal definition; real essence and real definition.

scientist starts with a nominal essence because this is what is more readily perceived and moves towards discovering its real essence. Thus, real essences are only knowable *a posteriori* (Bhaskar, 1975, p. 210).

A further distinction must be made between essences and definitions,[292] or rather, nominal and real definitions. Real definitions are *"of things, substances and concepts; nominal definitions are definition of words"* (Bhaskar, 1975, p. 211). Thus, one should note the difference between the nominal essence (properties) of a thing, which actually says something about a thing although not about its structure (this is captured by its real essence), and the nominal definition of something. Traditionally, nominal definitions refer to meanings of words or expressions while real definitions, in an Aristotelian sense, refer to essences (Craig, 2005, p. 164).

The real definition tries to encapsulate the real essence of a thing in words. Thus, if a thing has four legs, barks and eats dog food, the thing's nominal essence or properties at a certain level are indicated. These properties can be explained by its real essence or underlying structure/mechanism of a certain genetic code. To give a real definition of a dog will entail both properties and structure. Because it is an activity at the transitive level it is prone to error and, therefore, real definitions can be revised (Bhaskar, 1975, p. 211). It must also be noted that it is a definition of a thing after its real essence has been discovered.[293]

(b)   The dual task of science

The difference between nominal and real essence points to the dual task of science. Nominal essences refer to properties that need to be explained, hence, a first task of science is given by describing what there are, or as Bhaskar puts it, science has a *taxonomic* task. However, science does not stop at description because beneath properties and behaviour are structures and mechanisms.[294] The second task of science is then explanatory: science *"… aims at real definitions of the things and structures of the world as well as statements of their normic behaviour"* (Bhaskar, 1975, p. 211). The impression may have been created above that description is required before science

---

[292] A nominal definition is one where certain properties of a thing are mentioned in order to distinguish it from other things. However, it does not define its real essence (Blackburn, 1996, p. 263). Thus, a nominal definition will refer to copper as something that is red, malleable and that can conduct electricity etc. whilst the real definition will refer to its atomic structure (cf. Bhaskar, 1975, p. 211). Thus, whilst Bhaskar distinguishes between real/nominal definitions and real/nominal essences, the latter is close to Blackburn's (1996, p. 263) real/nominal definition.

[293] Bhaskar (1975, p. 210) gives the example of the real essence of Nickel which can be said to be its atomic number (which explains a number of its properties or nominal essence), but this can be said of Nickel only after its atomic number has been discovered and what the implications of an atomic number is for an elements behaviour, and so on.

[294] Is there a difference between structures and mechanisms or are they used interchangeably by Bhaskar (1975)?

can move to its explanatory task. This is not so. Real essences are only obtainable a posteriori. Some descriptive tasks can be done before explanatory ones but from explanatory work one would be able to say what kind of things there are: thus, *"… science consists in a continuing dialectic between taxonomic and explanatory knowledge; between knowledge of what kind of things there are and knowledge of how the things there are behave"* (Bhaskar, 1975, p. 211).

Bhaskar (1975, p. 213) briefly refers to objections against the use of essences in science that is important to this study. A denial of discrete differences between things leads to the view that differences are continuous. Categorical classification is thus totally man-made. Bhaskar (1975, p. 213) points out that this view renders scientific activity useless, for example, by counting chromosomes to determine the biological sex of a person. If differences were continuous then flowers could gradually change into chickens.[295] The point is that there are differences in nature not dependent on the classification of persons.

(c) Explanation in open systems

Following the taxonomic task is the explanatory one. Above, explanation in closed systems has been discussed from different perspectives (cf. p. 193). For instance, from the perspective of a law explanation refers to the mechanism the law describes; the three-step process of science involves explanations and so on. In each case it was assumed that some invariance was observed in an experimental or closed situation or that explanations were tested by experiments and thus rendered real. Given that reality is essentially open (and as we shall see it is a given for social reality) how can explanation work in open systems? The problem is pressing not only in social science, where Bhaskar assumes closure is not possible, but also in those natural science spheres where the experimental paradigm does not hold (e.g., geology or archaeology).

Bhaskar (1975, p. 125) provides four steps for explanation in open systems:

(a)   Causal analysis of event

(b)   Theoretical redescription of component causes

(c)   Retrodiction via normic statements to possible causes

(d)   Elimination of alternative causes

It follows the three-step process of science discussed on page 193: (a) events/phenomena are perceived; (b) an explanation for the events is formulated by

---

[295] Or *"… the class of the living is only conventionally divided from the class of the dead …"* (Bhaskar, 1975, p. 213).

means of a model for the underlying mechanism(s). As we have seen,[296] analogical or metaphorical (or retroductive[297]) reasoning are used for the construction of the model (Bhaskar, 1998, p. 12). Finally, (c) the postulated mechanism is tested empirically. As discussed on on page 203 above, Bhaskar (1998, p. 12) indicates two criteria for the establishment of the reality (or factuality) of a mechanism, namely, perceptual and causal: *"The causal criterion turns on the capacity of the entity whose existence is in doubt to bring about changes in material things"* (Bhaskar, 1998, p. 12).

In the four steps above, a complex event in an open system follows basically the same steps except that the event is complex, meaning that many mechanisms are probably involved (as an example, Bhaskar (1975, pp. 121-124) applied the four steps to a historical event in a social system, which is fundamentally open). The causal analysis of the event involves decomposing the event or phenomenon into its components. These components of the event are then redescribed in terms of theories that could be recruited for explanatory mechanisms. Then by means of retrodiction[298] the antecedent causes of the component events are inferred. There might be more than one cause for a particular event as retrodiction would show, consequently, alternative causes must be eliminated so that single causes together with the causes or factors of the other components contribute sensibly to the constitution of the event/phenomenon under consideration (cf. Bhaskar, 1975, p. 125).

7.3.7 *Science as work: the transitive sphere*

The distinction between the transitive and intransitive spheres is crucial for Transcendental Realism. As we have seen the intransitive objects of knowledge are those that are independent of persons. On the one hand, these objects exist and will exist even when there are no humans to perceive study and know them. Linking objects and knowledge amounts to subscribing to the epistemic fallacy. Transitive objects of knowledge, on the other hand, are dependent on humans, or more specifically, they are socially produced objects of knowledge (Bhaskar, 1975, p. 21). Knowledge in the transitive sphere depends on (a) the work of persons and (b) pre-existing knowledge. Both will be discussed below. In tackling this final aspect in Bhaskar's (1975, p. 24) philosophy of science the deeper problem he initially posed comes to its final conclusion. The problem was how one can, in a philosophy of science, reconcile the transitive and intransitive spheres. This is of course important because empirical realist-based philosophies of science conflate the two spheres and radically anthropocentrise science: ontology depends on epistemology. However, by distinguishing a transitive and intransitive dimension Bhaskar's philosophy of science

---

[296] See paragraph 7.3.6.2.

[297] See footnote 322.

[298] What is the difference between retroduction and retrodiction?

needs to show how socially produced knowledge can be about a sphere that necessarily exists independently of humans (cf. Bhaskar, 1975, p. 24).

7.3.7.1   Science as work

First of all, scientific work in the transitive domain implies work as we have seen before: if observation was sufficient, knowledge would, so to speak, fall in our laps (cf. Collier, 1994). Work means that something is produced from raw material and the production requires effort from the side of the agent/worker/scientist. In the exposition of experimentation (paragraph 7.3.2 above) it was seen that obtaining closure is hard work (Bhaskar, 1975, p. 57) and involves effort from the side of the scientist as *causal agent* meddling in the affairs of nature (cf. Bhaskar, 1975, p. 58). Nature does not yield her secrets effortlessly and by saying this it is implied that nature *has* secrets (i.e., generative mechanisms) and that surface appearances are inadequate for informing scientific knowledge. Bhaskar (1975, p. 185) emphasises scientific work as a process of transformation where it operates *"on given materials … with given materials."* Its materials, in the latter instance, are its intellectual and technical tools such as theories, rational capabilities and its concrete instruments. In the previous instance, it works on previous theories and facts, transforming these to explain deeper and deeper levels of mechanisms. This constitutes what (Bhaskar, 1975, p. 21 & 185) call the Aristotelian basis of scientific work. In the transitive sphere science has a material and efficient cause. Previously given theories, traditions and so on, form the material cause.

Work as we have seen consists of empirical and conceptual work (paragraph 7.3.6.3 above). In both aspects scientific training is necessary: the scientist has to learn conceptual and empirical skills. In fact, she has to develop recognitive[299] and demonstrative skills, both which are necessary in the explanatory work of science (Bhaskar, 2008, p. 169). An example of recognitive skills is when one looks at an x-ray and recognises malignant growth. However, the ability to recognise a fuzzy spot within other fuzzy spots as a malignant growth requires training. Demonstrative skills are just as important for practicing science because the ability to utilise technology and various materials to construct experiments to *demonstrate* the existence of certain phenomena and mechanisms is crucial for the growth of science. This is another type of skill that requires training and whose knowledge does not merely infiltrate the body of scientific knowledge from the pool of common sense knowledge.

Empirical work presupposes conceptual work or as Bhaskar (1975, p. 191) puts it *"Theory without experiment is empty. Experiment without theory is blind."*[300] The pre-

---

[299] Although Bhaskar's (1975, p. 169) word, see ("Recognitive," 2015).

[300] This not too subtle reference to Kant shows that the relationship between concept and observation is far from clarified or settled. Bhaskar tried to deal with the problem of idealism by

formed knowledge and theories constitute the Aristotelian material cause for doing science (Bhaskar, 1975, p. 194). Previously established theories, knowledge, existing materials and technologies all collaborate to provide the fuel for further work. Although training is required here as well, the main point is that previously established knowledge is transformed in the continuous labour of science. No new knowledge is created[301]; knowledge is transformed in order for the process of science to continue. As Bhaskar (1975, pp. 195, 197) says, it is contingent that science is continuous but seeing that it is so, its continuity depends on transformation of the material cause. Transformation involves change and change in this context involves the transformation of its knowledge and of the scientist. The scientist is changed in training and knowledge is changed in the dialectical depth process of science and as such *"… in both cases what is transformed is itself already a social product"* (Bhaskar, 1975, p. 57). Bhaskar (1975, pp. 24, 195) is laying the groundwork for motivating the sociological dimension, i.e. the transitive dimension, of science. The requirement for philosophy of science was stated above, namely, it must be able to establish the grounds for both an ontological and transitive (sociological) dimension of science.

The scientific process in both its empirical and conceptual labours is not an individualistic enterprise. It is social not so much because of a communal perspective of the origin of previous theories, knowledge, materials and technologies that are socially formed in a community of scientists. It is rather based on a particular relationship between the individual and the social. Bhaskar (1998) develops this model of the relationship of the social and individual (structure and agency) in PN. The metaphor of language can be utilised to explain what Bhaskar intends with the relationship between society and the individual. The relationship between the latter then serves as a way to conceptualise the social dimension and its relationship with the intransitive sphere of science. Language pre-exists the individual in the sense that he or she is born into a language. Language is continuous and is constantly transformed and changed by individuals speaking the language—therein lies its continuity. However, it cannot be reduced to the individual. In this sense language exists because of the speech acts of individuals but it does not result from those speech acts.[302] The same goes for society and agents (cf. Bhaskar, 1975, pp. 195-196). Of course, a similar process applies to science but both language and society come together in the scientific process: *"Knowledge shares a feature common to many social products then: namely that though it exists only in virtue of human activity, it is irreducible to the acts of men"* (Bhaskar, 1975, p. 187). Knowledge is a social product and scientific

---

formulating the epistemic fallacy principle, but does he not commit the same fallacy by inserting the mind at various points?

[301] *"Men do not construct their knowledge: they reproduce or transform it"* (Bhaskar, 1975, p. 195).

[302] Of society Bhaskar (1975, p. 195) says *"It exists only in virtue of the intentional activity of men but it is not the result (or cause) of their intentional activity."*

activity is a social process. Scientific activity (and knowledge) as continuous cannot be reduced to atomistic and individualistic acts—this much has been established by the special relation between the social collective and the individual agent.

7.3.7.2 Scientific knowledge as corrigible

Being transitive the practise of science in its theoretical or intellectual work and practical work is essentially a social activity and, therefore, corrigible. Theories are not produced *ex nihilo* (Bhaskar, 1998, p. 11) or declared *ex cathedra*. Theories and practices are produced within a community and within a history. Production of knowledge depends on social activity and on previously existing knowledge: "… *science must be seen as a social process, whose aim is the production of knowledge of the mechanisms of the production of phenomena in nature—the intransitive objects of inquiry*" (Bhaskar, 1998, pp. 11-12).

Bhaskar (1975, p. 196) also says *"Established facts are social products"* and if this is so, then facts cannot be objective and incorrigible. In fact, because facts and knowledge are located within the transitive sphere, where change and transformation take place and where humans make mistakes about knowledge, facts can be revised. The corrigible nature of knowledge does not mean that knowledge is fallible or falsifiable. Bhaskar (1975, pp. 197-198) rejects fallibilism and falsification. In order to reject a theory (or statement) the scientist must work with antecedently established knowledge, because if all statements are fallible then nothing can be verified or falsified. However, the same principle applies to the corrigible nature of knowledge or stating that transitive knowledge can be revised. Bhaskar might be contradicting himself, but I suspect he has the logical inconsistency between falsifying a theory with a single observation statement in mind.[303]

7.3.7.3 Science as intellectual work

The process of science involves the imagination and thought of human beings. This much is clear from the three-step process of science: imaginative work is an integral part of doing science by proposing possible generative mechanisms. This is where the transcendental idealist stops. However, the imagination cannot run free and embark on flights of fancy: it is critical imagination—always historical and social—which means that it transforms existing knowledge. Knowledge, as Bhaskar (1975, p. 185) says, has a material cause, namely, pre-existing knowledge. Although it is a conceptual process, science delivers knowledge of intransitive objects and the access the scientist has to these intransitive structures is by means of perception and experiment (which implies a causal criterion of factuality) (Bhaskar, 1975, p. 185). Bhaskar (1975, p. 186) says that there is a *"direct link"* between the TR thesis of intransitivity and transitivity which classical empiricism inverts. On the one hand, we

---

[303] My supervisor pointed this out.

210

have the thesis that structures of nature exist and act independently of human beings, and on the other hand, that facts and conjunctions are social products. Human beings produce facts that are based on pre-existing knowledge and the experience of conjunction of events is the result of experimental work. However, in empiricism "… *facts and their conjunctions appear as naturally given and things and causal structures as experiences of men*" (Bhaskar, 1975, p. 187).

7.3.8 Conclusion and summary

Natural science is a process focussed on uncovering stable generative mechanisms. Immediately, this statement acknowledges the transitive and intransitive dimensions of science. The world exists independently from the minds and workings of human beings; if it were not so then science as a human and social activity would not have been possible. Bhaskar's transcendental argument enquires about the conditions for the possibility of science and instantly its intransitivity and structured nature is given: it must be independent of humans and it must be layered. The mistake of metatheoretical positions having empirical realism as their underlying ontological framework, is to view reality as one-dimensional, i.e. conflating the domains of the real, actual and empirical and, thereby, making an essential human activity, namely, experiencing events, the arbiter for what is real. Consequently, what is knowable, perceivable or within experiential ambit, determines what is real.[304] It thus leads to one committing the epistemic fallacy and making ontology the servant of epistemology. Bhaskar view entails a radical rehabilitation of ontology, acknowledging the real but also putting conceptual and practical work in its rightful place.

Still, the arbiter for the transcendental realist remains empirical experience and, of course, causal effects, but its hubris is reigned in: its worth depends on the work of causal agents within closed systems and its nature, namely, what it points to are essentially non-empirical but *real*. I can think of no better summary and conclusion to this section than Bhaskar's own words in a rather lengthy quotation:

> *Scientists attempt to discover the real essences of things a posteriori, and to express their discoveries in real definitions of the natural kinds. From a description of the nature of a thing its behavioural tendencies can be deduced. When such tendencies are realized the events describing the stimulus or releasing conditions for the exercise of the tendency and its realization may be said to be necessarily connected. Thus scientists can come to possess knowledge of necessary connections between events as a result of an a posteriori process of discovery. Scientists are not content to collect conjunctions of events. Rather*

---

[304] If, in principle, observation is the final criterion—I say this tongue-in-the-cheek—then we cannot make a strict demarcation between transitive and intransitive. How does Bhaskar manage to bridge the gap? At least Kant was creative with his Transcendental Idealism! Kant says the mind imposes structure on reality whilst Bhaskar says nature does so for humans.

they try to discover the natures of things. Given this, no problem of induction can arise. Since it is not possible for a thing to act inconsistently with its own nature and remain the kind of thing it is. That is, a thing must tend to act the way it does if it is to be the kind of thing it is. If a thing is a stick of gelignite it must explode if certain conditions materialize. Since anything that did not explode in those circumstances would not be a stick of gelignite but some other substance. Now given the satisfaction of the criteria for the identification of a substance, say water, and the recording, preferably under experimentally closed conditions, of its most significant and suggestive behavioural properties, scientists move immediately to the construction and testing of possible explanations for the protolaws identified. But if there is an explanation, located in the nature of the stuff or the system of which the stuff is a part, whether or not it is known by men, water must tend to boil when it is heated. It is the real stratification of nature that justifies induction in science. It is not we that impose uniformities upon the world, but nature that makes induction (properly circumscribed) a rational activity for men (Bhaskar, 1975, pp. 214-215).

CHAPTER 8 CRITICAL REALISM IN SOCIAL SCIENCE

8.1 Introduction

Bhaskar (1975, pp. 244-245) considered the possibility of experimental work in the social science and psychology and concluded that most of the social science cannot be fit into the paradigm of Transcendental Realism in the natural sciences that views experimental work as intelligible in the light of the distinction between laws and events. The identification of mechanisms underlying the behaviour of phenomena requires experimental work which presupposes the ability to construct closed systems whereby the perceived events can be judged to falsify or confirm our expectations of the behaviour of mechanisms (Bhaskar, 1975, p. 245). Social science, psychology and related non-experimental sciences find it very difficult to construct such closed systems.

As a conclusion to the possibility of natural science, Bhaskar (1998, p. 13) asks whether a similar *"movement"* is possible in the human sciences as in the natural sciences: it is the naturalist movement *"… from knowledge of manifest phenomena to knowledge of the structures that generate them."* The problem of naturalism for Bhaskar (1998, p. 1) is whether *"society can be studied in the same way as nature"*. His (1998, p. 159) eventual answer is that *"… the human sciences*[305] *can be sciences **in exactly the same sense**, though **not exactly in the same way**, as the natural ones."* This means that Bhaskar thinks that he captured the essence of what it is to be scientific and that this real definition of science applies to both the natural and social sciences. However, the difference lies in the "way" they are sciences and this must be explored below. This much can be said for now, namely, that rational theory construction consists of capturing the movement from phenomena to generative structures (Bhaskar, 1998, p. 159). This process of theory construction underlies both natural and social science. The transcendental question about the conditions of the possibility of a natural/social science or how the world must be in order for science to take place, has the same answer, namely, reality is structured which implies a depth ontology. Underlying phenomena and events are generative structures (note the sense of "structure" as used here differs: reality is structured means levels of reality, and generative structures mean mechanisms causing things to happen or appear) [306] and this acknowledgment partly constitutes science as realist. The other aspect that establishes realism is the assumption that these structures or objects are intransitive. Thus, in the *sense* of the world as structured and intransitive both natural and social science are sciences. However, the *way* the social world is structured and intransitive differs from that of the natural science.

---

[305] Bhaskar uses human sciences and social sciences interchangeably.

[306] This distinction reflects Bhaskar's (1998, pp. 169-170) usage of the term structure.

213

The problem of the possibility of social/human science[307] is not similar to that of natural science. Bhaskar could pose the transcendental question[308] more readily in the context of natural science because it is actually executed (and it progresses) in the natural environment and the answer to the transcendental question provides a clue to what the nature of the world is.

In social/human science the situation is not so simple. In the first place, the progress of science in the domain of the social is very slow and its scientific status is disputed on a number of fronts. It is therefore problematical to ask that given that social science is practised, how the social world should be like to make social science possible. The question that Bhaskar then asks is much more cautious. Acknowledging the fact that we do have knowledge of the social and that the social probably does have a particular character, he asks *"what properties do societies and people possess that might make them possible objects of knowledge for us"* (Bhaskar, 1998, p. 13)?

8.2   Methods in the natural and social sciences

Although naturalism postulates *"a unity of methods"* between natural and social science, one must realise that this entails neither reductionism nor scientism, because the previous would imply that the subject matter of both are the same, and the latter that there is no difference in their methods with respect to the natural and the social (Bhaskar, 1998, p. 2). It seems as if Bhaskar says that the methods of the natural and social sciences are similar but simultaneously they are not the same, so what does he mean? Naturalism in natural science and social science forms the umbrella if it is based on Transcendental Realism (cf. Bhaskar, 1998, p. 3). Methods can be grouped only under this particular umbrella without denying that they differ when applied to either the natural or social science. So in Critical Realism we do have different methods but not based on a fundamental and radical break between the natural and social sciences (whatever this break may be based upon, such as, nomothetic and ideographic, or causality and meaning) (see page 229 below). The difference in methods is based on (a) the subject matter and (b) the relationship between the science and its intransitive objects.

8.3   Social domain

It is necessary to discuss Bhaskar's view of social phenomena and society despite this study's focus on psychological science. The way he deals with social phenomena and science demonstrates Bhaskar's approach and particular arguments can be described in the light of the basic principles for the philosophy of natural science we have discussed above.

---

[307] I will talk of social science rather than human sciences.

[308] What must the world be like for science to be possible?

8.3.1   Different models of society

Sociology studies relations and relations between relations (Bhaskar, 1998, pp. 28-29). It is incorrect to view social phenomena as a collection of individuals, thereby forcing research to depart from individualistic atomism. Bhaskar locates the problem why individualistic atomism predominates within the perception that the substantive (or as he puts it, the material) effects of society can only be felt through the action of individuals. Ontologically this idea can be situated within the implicit empirical realist ontology of acting particulars and epistemologically it can be located within the atomistic focus of conjunction of discrete events (Bhaskar, 1998, p. 30). Weber is an example of the individualistic model. He views social phenomena to be the result of individuals' actions Bhaskar (1998, p. 31).

Sociology also does not study collective behaviour as such (Bhaskar, 1998, p. 28). In this concept social phenomena have a life of their own (Bhaskar, 1998, p. 31). From the collective actions of persons emerges a new phenomenon that cannot be reduced to individuals. The model Bhaskar presents is that of Durkheim where social phenomena emerges from the collective action of individuals. Bhaskar (1998, p. 32) calls this the *reification* model of social phenomena whilst the Weberian one is called the *voluntarism* model. He identified a third model, viz., that of Berger which he calls the *dialectical* model. This entails society shaping individuals whilst individuals create society. In a sense, it combines the voluntarism and reification models: it acknowledges the agency of individuals and their role in creating society and it acknowledges the formative aspect of social phenomena. However, the reified phenomena are now seen as objectifications that, in a sense, mean that the link between people and society is severed. Bhaskar (1998, p. 33) finds this model problematic on account of the dialectical model merely combining the mistakes of the voluntarism (people create society) and reification models (society exists independently from people) (Bhaskar, 1998, p. 36).

8.3.2   The transformational model of society

Bhaskar (1998, pp. 34, 36) provides a wonderful example, which is based on the way language functions, of the "transformational" model he proposes. A person is born into a culture and language—language pre-exists the individual and the individual cannot speak (communicate) without this pre-existing language. Although language pre-exists, it can be changed in the course of speech, thus, developing new phrases and ways of expressing that is taken up in the tradition of the particular language. The relationship between the speaker (individual) and language (social phenomenon) is hereby clarified. It is not only a case of dialectical interaction i.e., one creates and the other forms because it presupposes a direct relationship between two ontological things, viz., people and society. Rather, *"Society stands to individuals … as something they never make, but exists only in virtue of their activity"* (Bhaskar, 1998, p. 34). People and society are two distinct ontological things, but the one exists because

215

of the other. For instance, if there is no speaker then language does not exist, but language is required for speaking. Hence, social phenomena pre-exist individual actions but requires actions for its existence. Bhaskar also says that people do not create society but transform it, which is illustrated by the language example above: language can be transformed by speech by incorporating speech forms over time.

That society pre-exists but requires human action for its existence, relates almost conversely to the role of the individual: people produce and transform social things but whilst doing that they enable the social things to exist. Bhaskar calls the first the "duality of structure" and the second "duality of praxis," and summarises the relationship between structure and praxis within their dual functions as follows: *"Society is both the ever-present condition (material cause) and the continually reproduced outcome of human agency. And praxis is both work, that is, conscious production, and (normally unconscious) reproduction of the conditions of production, that is society"* (Bhaskar, 1998, p. 35). Interestingly, the unintended consequences of individual actions or praxis are a reproduction of the conditions of society: we do not speak to keep language alive but to communicate, but a consequence of speaking is a perpetuation of language.[309] The transformational model acknowledges the interdependence between society and individuals but maintains their ontological distinctiveness. Thus, reduction is avoided. It also allows for history by securing the continuity of social structures whilst granting change by means of transformation to take place (cf. Bhaskar, 1998, p. 37).

What, in social science, are analogical to events and mechanisms we find in natural science? We have (a) social activity or production and transformation (for example, speech) that are similar to events, and (b) social structures that are similar to generative mechanisms according to Bhaskar (1998, pp. 37-38). The concept-concept dependence in the social science was noted above and it plays a fundamental role in understanding the difference between social and natural science. Social structure, as analogical to a generative mechanism, is dependent on human agents, whom maintain the conditions for its existence: no talking, no language. Thus, the reproduction of the conditions of existence of social phenomena is a necessary condition despite its ontological distinctiveness. Both social phenomena and their conditions are social products, which mean that they are all *relatively* enduring and not enduring as is the case with natural science. Furthermore, social structures are intertwined so only relatively autonomous because they develop and are sustained by

---

[309] Bhaskar (1998, p. 35) uses the example of marriage: people do not marry to keep the idea of a nuclear family going! A more mundane but illustrative example is that of the transport industry— we do not buy vehicles to keep the vehicle industry going; we buy to get to places but if we stop buying, the industry collapses.

the agents responsible for them.[310] Bhaskar (1998, p. 38) summarised the ontological limits implied by the above:

(a)   The existence of social structures depends on the activities they regulate.

(b)   The existence of social structures is dependent on the conceptual understanding of the acts of those that act.

(c)   Social structures are relatively enduring.

Of course, these must be contrasted with the ontological parameters of natural science: mechanisms and structures in natural sciences do not depend on their activities, the mechanisms are not concept dependent, and they are enduring:

Society, then, is an articulated ensemble of tendencies and powers which, unlike natural ones, exist only as long as they (or at least some of them) are being exercised; are exercised in the last instance via the intentional activity of human beings; and are not necessarily space-time invariant (Bhaskar, 1998, p. 39).

(An interesting aside is whether social phenomena can only be ascribed to human beings (an issue, as far as I know, Bhaskar does not address). We have a similar problem with consciousness: does it not speak of anthropocentricity and epistemic hubris to ascribe consciousness only to humans? Do we not have an analogous case with society—in what sense do animals have culture, create social products and so on? A related issue—can we speak of culture and social products of extinct societies and how is it possible to say that we can study the society, language or culture of the Incas or Egyptians of Antiquity?)

An important principle in establishing the reality of social structures is the effects they have on agents and other structures (Bhaskar, 1998, pp. 39-40). Social phenomena enable action but also constraints actions as we have seen in the language-speech example above: I cannot move outside the rules and constraints of grammar to make myself understandable, but the constraints of language do not prescribe the content of my communicative acts. It is also important to realise that individual agency can never be removed from this model, as much as society cannot be removed. Bhaskar uses the causal criterion to demonstrate the centrality of the relationship concept. Bhaskar (1998, p. 40) says that one requires linking or mediating concepts between social structures and human agency:

… For it follows from the argument of the previous section that social structures (a) be continually reproduced (or transformed) and (b) exist only in virtue of, and are exercised only in, human agency (in short, that they require active 'functionaries').

---

[310] I do not follow this argument too well!

217

Combining these desiderata, it is evident that we need a system of mediating concepts, encompassing both aspects of the duality of praxis, designating the 'slots', as it were, in the social structure into which active subjects must slip in order to reproduce it; that is, a system of concepts designating the 'point of contact' between human agency and social structures. Such a point, linking action to structure, must[311] ***both***[312] *endure and be immediately occupied by individuals. It is clear that the mediating system we need is that of the* **positions** *(places, functions, rules, tasks, duties, rights, etc.) occupied (filled, assumed, enacted, etc.) by individuals, and of the* **practices** *(activities, etc.) in which, in virtue of their occupancy of these positions (and vice versa), they engage. I shall call this mediating system the position-practice system. Now such positions and practices, if they are to be individuated at all, can only be done so* **relationally** (Bhaskar, 1998, pp. 40-41).

To make it concrete an example will be used: both position and practice are needed to link individuals and social structures. Accordingly, in a social product such as a government department what do we need to link the department and its individuals? Positions, or in this case various posts with specific duties (management, finances, HR, admin, line functions), and activities the posts are responsible for. Thus, the person in HR, say John, as a particular individual, occupies the position and executes the function for salary payouts. Note that, in a sense, it is not important that it is *John* that occupies the role but that it is occupied by *someone*: the position and action both constitute the relation between the particular individual John and the social product. Do we have relations between John and Susan in the same department? As a link between aspects of the social structure and the individuals making up that social structure the relation between John and Susan is at most contingent and external to the social system (if they are friends, speak to each other in the tea room etc.), but the relation between their positions is internal[313] (and integral) to the social system (cf. Bhaskar, 1998, p. 41). If I understand it correctly, one can easily replace particular individuals in this set up, but it is in the end the particular individuals that act and create the conditions for the social product to exist.

Social products and systems probably refer to concrete and less concrete (or theoretical in the sense of "not observable") products and systems. Books, post offices, groups, states, families, mob behaviour, and CDs are all social systems and products. Let us use another example of a less concrete social system although a government department is a theoretical phenomenon despite concrete manifestations of its products and constituents. What constitutes a game of chess (or rugby, cricket

---

[311] I cannot see why this *must* be so.

[312] Emphasis the author's.

[313] Bhaskar (1998, p. 42) defines internal relations as internal if the essence of the relata is determined by each other. Thus, their real definitions are determined by each other.

or a conversation)? Is it the individual players busy with peculiar actions in a demarcated area or is it the rules of chess, the chess pieces or the observers? The social system, viz., chess, is theoretical because we can say that A won the game but nobody can observe the game except while they are playing or executing the moves. Whilst they are playing we can say they are playing a game but it is not the particular move they are making at the moment but the totality of actions, thoughts, rules, etc., that constitute the game. But the game would not exist unless somebody plays it. And if they stop playing does the game cease to exist? The particular game does not endure[314] (and this is maybe a point of criticism against Bhaskar since the game of chess is not suddenly negated when no one plays it at a particular time in the world). How should we distinguish between the universal phenomenon chess and the particular manifestation when it is played? Whilst I am not conversing with someone, does this mean that conversation ceases to exist? I tend to say no but I am unsure what ontological status to assign the idea of game or conversation. Is this not what Popper (1978) meant by his world 3? Clearly, Bhaskar (2005, p. 63) does not agree with the world 3-idea. He says knowledge, for instance, pre-exists men and probably would say the same with these phenomena. But how do these phenomena pre-exist and still depend for their existence on humans?

However, the relation between the social system or phenomenon, namely, the game of chess being played and the individuals playing it consists in the positions or role of the particular players (white and black) and the actions allowed them within the game.

Bhaskar (1998) points out that some social phenomena, such as society, can be known by their effects, i.e. they can be known to exist but not shown to exist. This is, of course, the same as some natural phenomena, but whereas natural phenomena exist independently from their effects, social phenomena do not exist independently from their effects. As we have seen in the discussion of natural phenomena, even though phenomena can be unobservable they still can exist but in the case of social phenomena, their effects are visible only in open systems. According to Bhaskar (p. 45) social phenomena cannot be encapsulated in closed systems and this places an *"epistemological limit"* on naturalism in social science:

> *Humean theories of causality and law, deductive-nomological and statistical models of explanation, inductivist theories of scientific development and criteria of confirmation,*

---

[314] *"In social life only relations endure"* (Bhaskar, 1998, p. 41).

Popperian theories of scientific rationality and criteria of falsification,[315] together with the hermeneutical contrasts parasitic[316] upon them, must all be discarded. (p. 45).

The epistemological limit implies no ontological limit meaning that even though we cannot close social systems *it does not mean that they do not exist*; as will be remembered if we do infer from methodological limits an ontological limitation then we are committing the epistemic fallacy. Furthermore, the existence of social laws cannot be denied on grounds of an epistemological limit.

8.3.3 Measurement in social science

Bhaskar (1998, p. 46) points out two additional limitations on social science with regard to measurement:[317] what he calls "*the irreversibility of ontologically irreducible process*" requires, according to Bhaskar, qualitative concepts rather that quantitative. Furthermore, social science deals with meaning because it is a concept constituted phenomenon.

If social science cannot be studied within closed systems, how can it be studied? Bhaskar (1998, p. 47) maintains that social science can be studied scientifically. Intransitivity was a requirement for the possibility of the natural science and in the social science the situation is no less different except that one should distinguish between existential intransitivity and causal interdependency. The latter refers to the concept-concept dependence of social science. Its objects may even be radically changed in the process of being studied. It is transformed by interacting with it. The former refers to the fact that a phenomenon exists despite interdependency. It should be clear that social phenomena are causally interdependent and existentially intransitive whilst natural phenomena are only existentially intransitive (Bhaskar, 2005, p. 51):[318]

---

[315] My supervisor raised a crucial question, namely, what does Bhaskar regard as sufficient for validating knowledge if he rejects falsification, confirmation and so on?

[316] With *parasitic* Bhaskar (1998, p. 147) refers to the image of science the hermeneutic tradition has illustrated by his discussion of Winch: "*Winch's acceptance of an essentially positivist account of natural science leads him to overstate the anti-naturalist implications of his model*"

[317] "*However, two significant limits on the possibility of meaningful measurement in the social sciences should be noted. The irreversibility of ontologically irreducible processes, comparable to entropy in the natural sphere, entails the necessity for concepts of qualitative rather than merely quantitative change. But the conceptual aspect of subject-matter of the social sciences circumscribes the possibility of measurement in an even more fundamental way. For meanings cannot be measured, only understood. Hypotheses about them must be expressed in language, and confirmed in dialogue. Language here stands to the conceptual aspect of social science as geometry stands to physics. And precision in meaning now assumes the place of accuracy in measurement as the a posteriori arbiter of theory. It should be stressed that in both cases theories may continue to be justified and validly used to explain, even though significant measurement of the phenomena of which they treat has become impossible*" (Bhaskar, 1998, p. 46).

[318] "*… social science, on this conception, is critical, self-reflexive and totalizing. And its objects are existentially, but not causally, intransitive; concept- dependent, but not conceptual; and transfactually efficacious,*

220

The human sciences, then, take intransitive objects like any other. But the categorical properties of such objects differ. And among the most important of these differences is the feature that they are themselves an aspect of, and causal agent in, what they seek to explain (Bhaskar, 1998, p. 47).

In conclusion, Bhaskar makes the following claims about social science:

(a)   Generative structures in social science do not have the luxury of closure except in cases of transition and crisis (Bhaskar, 1998, p. 48).

(b)   Hypotheses for generative structures in social science can be assessed empirically (Bhaskar, 1998, p. 49).

(c)   Real definitions of social phenomena can be provided based on previous knowledge. If no such knowledge exists and a hypothesis must be made about a causal mechanism then it is "more or less arbitrary" (Bhaskar, 1998, p. 49)!

(d)   Bhaskar says that causal hypothesis generating must be replaced by a procedure for generating real definitions. However, social science concepts and knowledge is dependent on the activity of the social structures (he calls it the activity-dependent nature of social structures).

8.4   Agency

Bhaskar (1998, p. 80) wants to apply his hypothesis of naturalism to psychology: "… *that there are generative structures, knowable to us, producing the manifest phenomena (in this case consciousness), can be vindicated … ."* Why consciousness? According to Bhaskar (p. 80) it is the one of the states of a person "… *in virtue of which mentalistic predicates are applicable,"* which means that one can say of persons that "they believe that …," or "they think that."[319] In explaining human behaviour and actions one usually refers to reasons such as "John drank water because he was thirsty" or John could provide the answer himself in terms of reasons for his actions. Bhaskar wants to ask then whether reasons can be causes for actions and behaviour. We have to understand what he means by "reasons." A generative mechanism is causal and by implications there are generative mechanisms underlying the behaviour and actions of people. Are reasons then analogous to a generative mechanism or at least indicative of the effects of a generative mechanism? Bhaskar (1998, p. 83) answers affirmatively and says that

---

but irreducibly historical (that is, bound in space and restricted in time)" (Bhaskar, 2005, p. 136). Existential intransitivity refers to the fact that something exists, thus similar the meaning of the existential quantifier ∃ (Matthews, 2014).

[319] Is this correct—what does "mentalistic predicate" mean?

empirical knowledge of the reasons or generative structures are possible according to Transcendental Realism.

8.4.1   Reasons as causes

What are the assumptions Bhaskar makes with regard to human agents? (a) People have minds and he defines a mind as the ability to manipulate symbols. This points to language ability but he grounds language ability in the ability to be self-reflexive, i.e. to be aware what a person does and be aware of this monitoring. To produce knowledge and information about those states and to bring past and future states into the focus of conscious awareness requires language. (b) Persons, over and above reflective monitoring of their actions, do things, i.e. they act as casual agents. (c) The fact that we can distinguish between doing (acting) and things that happen to a person, implies that some intention can be described to actions (cf. Bhaskar, 1998, pp. 82-83). However, one must note that *"There is in general no single correct description of an action, independent of context and descriptive purposes, of it as an act of particular type"* (Bhaskar, 1998, p. 82). However, one can decide whether it was an action (on grounds of it being intentional). (d) Reasons fall under conative (desire) and cognitive (belief) categories. Both are usually involved, the one presupposing the other.

8.4.2   The possibility of discursiveness

How is discursiveness possible seeing that it does take place? On an individual and social level, even in science and culture, discursive practises take place, i.e. persons are able to argue about things all the time making judgments that some opinions are wrong, others correct or some are better arguments that others. Arguments consist of conclusions and reasons. Consequently, we should be able to distinguish between better and worse reasons for a particular conclusion. It does not involve a stretch of imagination to see that on a reflexive level, people engage with themselves in arguments trying to convince themselves to do things or say things, and finding appropriate reasons to do so. The ability to recognise an inadequate or wrong reason for one's own actions (and of course by extension for others' as well), grounds the possibility of discursiveness (cf. Bhaskar, 1998, p. 91). In evaluating real reasons or possible reasons for thought, speech or action we exhibit discursive abilities. Bhaskar (1998, p. 90) says that the distinction between real and possible reasons makes discursive life possible.

The second step in this argument is to establish that the discursive nature of mind, or the distinction between real and possible reasons (real reasons are those that are causally effective) (Bhaskar, 1998, p. 92), does not make sense except if it is

to have an useful outcome such as deciding which actions to take.[320] My ability to weigh up reasons against each other is executed in order to motivate my actions (which includes both physical and speech acts). I can, for instance, cite reasons why I should ask for a raise but also argue that it is not a good time because the boss is busy and so on. Therefore, my subsequent speech and actions or lack thereof is based on the reasons I have provided for myself. It ought to be evident that this discursiveness and the ability to distinguish between better or worse reasons grounds the function of reasons as causes for behaviour. We can call this discursive ability *rationality* and, consequently, realise that rationality underlies activities such as science. In science (or in other discursive practices ranging from the private to the public) reasons functions as causes (cf. Bhaskar, 1998, p. 92). Reasons can be causes because of the following: (a) a cause is a trigger for action; (b) a reason may be supplied by others or by ourselves; (c) states, events and dispositions can be causes.

Reasons are possessed even when not exercised. These reasons function normically, i.e., as tendencies (Bhaskar, 1998, p. 93). Tendencies functions in open systems, and tendencies can be thwarted by means of circumstances not allowing their exercise, finding alternative reasons not to act or act differently. Bhaskar sets out to explain the relationship between beliefs, wants, and desires while distinguishing between conative and cognitive functioning (and emotive?). He (1998, pp. 96-97) says reasons are beliefs (a) which means that human agency presupposes beliefs; (b) beliefs are continuous unless prevented; (c) desires lead to actions; (d) beliefs presuppose desires; (e) beliefs and desires reaches wide due to unconscious desires and beliefs.

Why, then, should the explication between beliefs, desires and wants and the number of inferences made above be relevant to our current project? Bhaskar (1998) says

> *Reasons, then, are beliefs rooted in the practical interests of life. And a person's essence consists just in what she is most fundamentally disposed to do (or become): that set of effective beliefs that determines her psychic (and behavioural) identity, and fixes her in her particularity as a kind* (p. 96).

Why bother with distinguishing between reasons and causes and what does it contribute to explaining human behaviour at all? Does the understanding of reason as causes provide any mechanism for making psychology possible? *"Now, the powers that make psychology possible cannot be seen or touched, tasted, smelled or heard. But their existence and exercise are all the same a condition of the possibility of any empirical science"*

---

[320] *"… unless a reason could function as a cause there would be no sense in a person evaluating (or appraising) different beliefs in order to decide how to act"* (Bhaskar, 1998, p. 92).

(Bhaskar, 1998, p. 101). What does this mean? Powers[321] are the things that allow people to act or be agents, namely, to causally interfere. Powers cannot be reduced to other stuff or things but they *emerge* from matter.

8.4.3   Reduction

Why is it important to understand why powers cannot be reduced to other things—if that were so then powers of minds can be reduced to neurophysiology so that if we have to explain the powers we then have to move over to neuroscience and psychology as a science is dissolved? Bhaskar shows that powers cannot be reduced by attacking central state materialism (CSM) or the position that mind can be reduced to matter.

Reduction can be seen as (a) providing the basis for something else; (b) one thing explains another and (c) knowledge of one thing enables prediction of the other (Bhaskar, 1998, p. 98). Bhaskar says that the explanation must be divided into diachronic explanatory reduction and synchronic emergence. The first consists of explaining how the whole can be formed from its elements by referring to principles governing their interaction. Note that the whole exists on a higher level than the elements. According to Bhaskar this type of reduction is consistent with synchronic emergence because the higher order principles cannot as such be deduced form the lower order principles: something new actually emerges. Materialists deny synchronic emergence.

Two criteria exist for successful reductions, namely, (a) individuals from the two levels cannot occupy the same space at the same time and one cannot be a part of the other, and (b) the two sciences that are involved in the reduction should have well-developed taxonomies and some of their terms should overlap. In the light of these criteria Bhaskar (2005, p. 109) argues that the reduction for instance of social to individual phenomena and individual to neurophysiological phenomena cannot hold because simply criterion (a) is violated by both social and individual phenomena: beliefs or a social phenomenon such as an economy, to take Bhaskar's example, cannot be localised in space. Criterion (b) is also violated because a taxonomy requires a well-developed science and the level to be reduced to (the lower level one) should be well-developed in order to explain the higher level one. However, in both cases of reduction (sociology to psychology, and psychology to neuroscience) the higher-level science acts as the reference point for the reduction. In the case of the second reduction neuropsychological correlates depend on the immature science and the higher-level science! The same goes for the sociology-psychology reduction: we

---

[321] *"The powers associated with mind are both real, that is, causally efficacious … and irreducible, that is, emergent form matter …"* (Bhaskar, 1998, p. 107)

cannot identify psychological actions as for instance political or economical so that we can reduce the phenomena of politics and economics to lower level phenomena.

8.4.4 Materialism

If CSM cannot be a viable option, what does Bhaskar propose? His (1998, p. 97) view is called *"synchronic emergent powers materialism"* (SEPM).

Causality across different categories of being can be called transcategorial, and belief-matter causality involves transcategorial causality. If it is possible in natural phenomena then it could be possible in psychology (compare gravity and material objects). Bhaskar says that the how of the effect between P-states and N-states cannot be explained but that they do is a fact.

An interesting observation from Bhaskar (1998, p. 104) is the following *"we will never find out how P-states affect N-states unless we make the P-states the site of an autonomous science."* Given the assumption of downward causation, this is a good reason to find explanatory mechanisms for powers of mind.

Bhaskar (2005, p. 115) provides a simple argument to refute CSM. For every psychological state there is a neuropsychological state that completely determines the psychological one and that is finite. The argument turns on the belief that materialism holds a complete and finite determined N-state for each P-state. The N-state is closed which means that other P-states cannot causally influence it (because CSM works the other way around—N causes P-states). If a second person requests an action, say "sweep the floor," and the first person complies, then the following happened: A P-state causally influenced an N-state albeit the P-state of the second person giving the request. The conclusion is that mind influences matter and the possibility of communication rests upon the mind-matter influence.

He also says that materialism is untenable given the non-identity between N and P-states. Psychological states have the characteristics of intentionality, referentiality and consciousness (some states are conscious). If P-states and N states were identical one would have to say that neuropsychological states are intentional and meaningful. According to Bhaskar (1998, p. 102) this claim is absurd because it is *"a necessary condition for any discursive intelligence that it should be able to refer and intend, explicate and judge. In this way mentalistic predicates are irreducible."* It probably is true that some states cannot be identical but we have learned from computers that 0s and 1s seems like nonsensical arrays except when they translate through a series of processing levels into words and sentences in the window of my word-processing programme on the PC screen. Thus I doubt whether a strict identity or non-identity argument between P-states and N-states is valid to support either materialism or emergent materialism.

225

8.4.5 Characteristics of social science explanation

Bhaskar's analysis of social science reveals that laws apply in the social sphere as much as in the natural sphere of the world. However, whereas natural laws are transfactual (i.e., applies generally across space and time), social laws are historical (Bhaskar, 1998, p. 129). The historical nature of social laws, i.e. that they can be spatio-temporally restricted, does not retract from the fact that there are law-like tendencies in the social science. Bhaskar denies that they should exhibit the characteristics positivism bestows on laws. The DN model of laws requires that an event be deducible from the initial conditions and a law(s) if it is to be explained (Bhaskar, 1998, pp. 124-125). Deducibility implies that events will always take place if the initial conditions and law hold, but CR regards social laws as normic (i.e., tendencies that do not always lead to the so-called predicted events). Consequently, deducibility cannot hold for a social law (Bhaskar, 1998, p. 128). Secondly, the historical nature of the social tendencies disrupts the "covering-law" aspect of the DN model, namely, it universal generalisability (see Bhaskar, 1998, p. 128).

Consequently, we can say of social science that its

(a) laws are normic: they are tendencies that might be realised (or not) in open systems, and they are historical.

(b) Explanation in social science does not involve prediction, or rather, have a symmetrical relationship between explanation (identifying causes) and prediction.

(c) Theoretical explanation in natural and social science is analogical and retroductive (Bhaskar, 1998, p. 129)[322]

(d) Historical explanation is conjectural and retrodictive (Bhaskar, 1998, p. 129)[323]

Bhaskar (1998, p. 129) says that law-like statements identified and utilised in theoretical and historical explanation must be empirically tested but closure is in

---

[322] Retroduction is a synonym for abduction that usually refers to the inference to the best explanation. Mautner (2000, p. 1) provided a useful explanation of abduction and this is related to Bhaskar's transcendental argument: if one observes facts about Y we try to find the most probable explanation for Y which is then X. The argument then takes the form of "if X then Y" if X is the most probable. The inference to the best explanation lies in the fact that X explains Y better then other hypotheses or assumptions we have. Bhaskar (1989, p. 19) uses retroduction in the context of postulating mechanisms by means of metaphors or models: "… *if it were to exist and act in the postulated way (it) would account for the phenomenon in question … .*"

[323] The opposite of prediction with reference to time, thus it entails a hypothesis that something happened in the past (Blackburn, 1996, p. 330).

principle not possible for the social scientist. All that she is left with is a process of explanation that Bhaskar (1998, p. 129) calls the RRRE model of explanation with the following components: (a) resolution, (b) redescription, (c) retrodiction and (d) and elimination. This model is designed to avoid Humean empiricism and focuses on uncovering generative mechanisms. According to Bhaskar (1998, p. 129) positivist explanation *"merely generalizes the problem"* whilst scientific explanation solves the problem, and in typical transcendental realist manner, proposes hypothetical constructs or concepts to explain the phenomenon. As we have seen above it avoids the transcendental idealist trap to stop at this phase. Although the theoretical concepts invoked in the explanation, which must be coherent and plausible (Bhaskar, 1998, p. 130), depends on the imagination and it is empirically constrained.[324]

Explanation in the social science aims at uncovering mechanisms, which tendencies describe. This means that things that are and happen can be explained by reference to explanatory mechanisms but because one works with social systems or principled open systems, the isolation of a single mechanism is impossible (as in experimentation). Thus one acknowledges multiple causes and the complexity of events (note that the complexity is not the distinguishing mark between natural and social phenomena because natural phenomena can be just as complex as social phenomena—the scientist cannot just isolate the mechanisms in an open system empirically). Thus, conceptual work in a social system requires *"the resolution of a complex event into its components"* which Bhaskar (1998, p. 129) calls causal analysis. It should be noted that we are dealing with components of an event and the idea in the explanation is to get to those aspects that caused the components making up the complex event.

The second and third steps involve redescription of the causes of the components. Why should one redescribe these? If we have the causes of the components why is it necessary to retrodict to antecedent causes? Bhaskar (1998, p. 129) also notes that the retrodiction requires antecedent causes by means of *"independently validated normic statements."* Does this mean that one has to find previously validated law-like statements or tendencies? If this is the case then this method of finding causes must be done within a theoretical framework because finding causes and normic statements makes only sense within a particular context— even though tendencies are not empirical and exist intransitively (keeping the ontological limits of naturalism in social science in mind) they can only be utilised within a particular theoretical understanding of reality.

---

[324] Currently I have difficulty uniting these two requirements—on the one hand Bhaskar does not allow empirical testing but on the other requires it for social science.

Bhaskar (1975, pp. 123-125), fortunately, provided us with an actual example of his so-called RRRE model, which I will recount briefly. From the following passage Bhaskar illustrates explanation in open systems:

> This **pressure** from the Labour Party, with its great **influence** on the industrial workers, combined with the attitude of President Wilson himself, slowly **propelled** Lloyd George in the **direction** of the formulation of war aims. **Hindered** as he was by the obligation of earlier agreements with the European allies, he **ensured** that his declaration, **made** on the 5th January 1918, was only in the vaguest terms. It was, however, not incompatible with the much more specific Fourteen Points enunciated independently by the American President a few days later, and appealed to by the German Government as a basis for peace negotiations at the time of the armistice in November (Bhaskar, 1975, p. 123; Pelling, 1960, p. 77).

If we follow Bhaskar's RRRE steps it would go as follows:

(a)   The complex event should be resolved into its component causes. The main event in the passage above is the formulation of war aims by George in 1918. Of course, one could ask a number of questions about this particular event such as what lead to Britain's engagement in the war, or why did George formulate war aims, or what was Britain's relationship with its enemies and allies; why were they enemies and allies and so on? Why should we choose a particular question or problem in this particular description? As it is a complex event in the sense of many factors playing a role in its coming to light, we might as well have had a description of another facet of this event which would have guided us along another interpretational road. The question is how do we decide on asking a particular question or are we merely guided by a description that in a sense were focused on war aims as in the above description? Because this arbitrariness or contingent nature of social (open) systems seems be to a defining characteristic of social systems—a point illustrated well by Gergen's example—a particular description already has a perspective involved in it (social reality is pre-interpreted). But how do we decide to investigate this and not another perspective?

In this particular passage there are three descriptions of the main event, George's war aims, namely, (a) his own, (b) a vague formulation and (c) those compatible with the fourteen points of the American president.

(b)   The causes for the formulation of war aims can now be theoretically redescribed so that some theory or more than one theory (with explanatory mechanisms) illuminates the components. Consequently, the question why the war aims were formulated presupposes (a) the Labour Party's influence as well as that (b) of the American president.

(c)   Retrodict from the redescribed components to antecedent events/state of affairs which could have brought the components about. Bhaskar (1975, p. 125) notes that usually a number of factors contribute to causing a particular component so that retrodiction cannot allow one to obtain the single most important factor that contributed to a state of affairs. Consequently, the following step is required.

(d)   Alternatives must be eliminated to enable one to identify the one cause that could have caused the event or state of affairs.[325]

8.5   Critical Realism: between positivism and hermeneutics

Bhaskar (1998) argues that the view of what science is was largely determined by positivism. The resulting anti-naturalism in the social science and in philosophy was largely modelled on this incorrect [326] view. Even hermeneutics and related constructionist movements' anti-naturalism was informed by this positivistic naturalism (cf. Bhaskar, 1998, p. 1). The characteristics of scientific practise taken over by social science and the philosophy of social science were based on the positivistic views of science that came to light in the discussion in the first part of this chapter above. Bhaskar (1998, p. 19) notes that in many cases anti-naturalism in social science theories take their cue from merely inverting an illegitimate positivist view of science and holding that approach forward as a better anti-naturalist alternative. It is obvious that inverting the wrong concept will yield a false or mainly inadequate counter view of what science is and should do! The terms (anti)-naturalism will be used in the following way: naturalism$_1$ refers to the essential transcendental realist characterisation of natural scientific practice, positivistic naturalism$_2$ to the image of science espoused by positivism and anti-naturalism to a reaction against naturalism$_2$.

Criticism of the naturalist$_2$ position entailed emphasising the different dichotomies applicable to natural and social science such as explanation (in the natural science) vs. understanding (in social science):

… causal explanation (Erklären) and interpretative understanding (Verstehen), the nomothetic and the ideographic, the repeatable and the unique; and an absolute contrast between the science of the physical non-human world of nature and the science of the world of mind, of culture and of history (Bhaskar, 1998, p. 18).

---

[325] Why does one need one singular cause? Does this mean that Bhaskar subscribes to the position that events/states have only single causes? Is this not an assumption in open systems such as the social world that no single cause is responsible for things?

[326] Incorrect according to Transcendental Realism.

Positivism sees laws as established by observation of constant conjunction of events. The establishment of laws requires the observation of these invariances, viz., a constant conjunction between events: *"Neither party*[327] *doubts for a moment that empirical invariances are necessary for laws …"* (Bhaskar, 1998, p. 17).[328] Explanation consists in finding these invariances. Social science philosophy sees this as a correct characterisation of natural science but then erects a defence against naturalism₂ and constructs the difference between natural and social science as follows: social reality cannot be characterised by a constant conjunction of events, i.e. laws are not applicable. The social is essentially conceptual and as opposed to explanation, understanding applies as access to social reality. The reason understanding applies is because social reality is conceptual and concepts consist of meaning—meaning can only be understood.

According to Bhaskar (1998, p. 17) the positivist reaction to these distinctions are as follows: they say the social world is complex therefore reduction is required to identify regularities, accordingly, they deny that the social cannot be subsumed under laws, merely, that it is difficult to do so. Above all, as we have seen in the previous chapter, meaning is not really a problem for the positivist. Whereas hermeneutics fundamentally opposes an empirical orientation to meaning (such as that meaning cannot be measured), the positivist subjects all meaning to empirical testing. What cannot be observed in principle, i.e. that cannot be reduced to protocol sentences, is not meaningful. The issue is debated on the level of the conceptual and the empirical; Bhaskar (1998, p. 17) continues *"Neither party doubts for a moment … that the conceptual and the empirical jointly exhaust the real."*[329]

Like positivism, Bhaskar (1998, p. 18) sees the various sciences as unified in method but unlike positivism's implicit empirical realist ontology which motivates a reductionist strategy, Transcendental Realism's motivation springs from a realist perspective. The closure that empirical realism requires is illicitly transposed to social science because realism sees this as a special requirement for experimental work and not as the prevailing state of affairs as positivism does (Bhaskar, 1998, p. 19).

The social sciences should be studied differently from the natural sciences because (Bhaskar, 1998, p. 20):

(a)   Social objects cannot be reduced to natural objects

---

[327] Naturalists₂ and anti-naturalists.

[328] See footnote 329.

[329] The full quote is *"Neither party doubts for a moment that empirical invariances are necessary for laws, or that the conceptual and the empirical jointly exhaust the real"* (Bhaskar, 1998, p. 17).

(b)   The predicates in the explanation of social phenomena are different from that of natural phenomena

(c)   The procedures that establish the predicates will be different

(d)   Principles that govern their production will remain the same

Bhaskar (1998, p. 20) says that there are certain similarities between CR and positivism and hermeneutics. The positivists say there are laws in social phenomena which Bhaskar agrees with. However, it cannot be reduced to events or empirical regularities. Furthermore, where we need a closure to study patterns of events, the social phenomena only occur in open systems. In fact, it cannot appear in closed systems at all—it tends to destroy the phenomena only apparent in open systems.

The hermeneutical tradition correctly holds reality to be pre-interpreted.[330] Consequently, social sciences, when working with social reality, must acknowledge that the reality they study is already interpreted in someway. Bhaskar (1998, p. 21) says they stand in a concept-concept relationship to their field of study as opposed to a concept-thing relationship as in the natural sciences[331] Because of the difference in relationship from that of natural science, the method studying social phenomena ought to be different.[332] However, what Bhaskar (1998, p. 21) finds problematic is the *"reduction of social science to the modalities of this relationship"* and the inability to formulate criticism.[333]

CR can counter the problems of positivism and hermeneutics by insisting on transfactuality (of social structures), while maintaining concept-dependence. It also upholds intransitivity of beliefs and meanings against hermeneutics (Bhaskar, 1998, p. 22). I understand this claim of Bhaskar to refer to the possibility of multiple interpretations, all equally valid. By implication, one interpretation can be replaced by another, making meaning neither (a) enduring, nor (b) objective (but intertwined with subjectivism), thus, not intransitive. Beliefs and meanings are the intransitive objects of social science, a sentiment echoed by Situational Realists (see page 137) (Petocz, 2011). This could be applicable to the hermeneutics of Gadamer (see paragraph 5.4.10). Bhaskar's aim was to show that hermeneutics react to a positivistic image of science, or in other words, its implicit ontology is similar to that of positivism. Although not the aim of this discussion, we must note that Bhaskar's analysis cannot be applied too widely and one should examine the implicit ontologies of authors such as Ricœur (1981), Gadamer (2004), Betti (1972), and Hirsch (1976),

---

[330] Is this similar to reality as pre-formed discussed above?

[331] Or subject-subject or subject object relationship (cf. Bhaskar, 1998, p. 21).

[332] Does this not contradict an earlier statement by him? See discussion on page 166.

[333] These issues need to be clarified because the way it is put here is not very clear.

to name but a few. Although some anti-naturalists did set up a straw man, viz., the positivist image of science, in order to legitimize their positions, Bhaskar views this tactic as symptomatic of hermeneutics and related approaches (see the quotation in footnote 336). Of course, Bhaskar takes Winch as a general example of hermeneutics.

8.5.1   Against positivism

Positivism in both the natural sciences and social sciences has similar characteristics. It must be reiterated that as an image of science, positivism is false even though it found easy acceptance as a so-called correct reflection of natural science (naturalism$_2$). This apparent acceptance in natural science probably can be explained by its occasional applicability in closed systems. Both CR and positivism require closed systems for the identification of laws but positivism generalised a particular condition (closed systems) which, as we have seen above, cannot hold in reality: the world is fundamentally open and the required consequences of closed systems (namely, the constant conjunction of events or event regularity) do not hold in open systems.

Bhaskar (1998) embarks on a many-pronged attack against positivism. He puts forth a transcendental and an immanent argument for the inapplicability of positivism as a correct view of science. The transcendental argument turns on the view of the possibility of positivism as a correct view of science. The answer is the same as for realist conditions for the possibility of science, namely, the world is fundamentally open and structured. Thus, positivism cannot be a correct view since its conditions depend on a closed world and the collapse of criteria for reality into empirical experience.

8.5.1.1   Characteristics of positivism

Positivism, according to Bhaskar, has the following characteristics:

(a)   The positivistic naturalist$_2$ view of science was, among others, based on the passive perception of *"empirical invariances between discrete events"* (Bhaskar, 1998, p. 17): its theory of knowledge defines man as a passive receptor of knowledge and the world as providing discrete and atomistic impressions. Certain knowledge can thus be had in experience by means of observing these atomistic events. This view of man and knowledge informed the Humean view of causal laws: laws are instantiated in the constant conjunction of atomistic events. Bhaskar (1998, p. 124) acknowledges that the focus in a positivistic image of science is not so much on a Humean conception as such, but on its effects. This implies that one would rarely find the expression of the Humean problem as Bhaskar explicates it in positivistic literature. The following two paragraphs express what can be found in positivism. These are the two principles underlying positivism's naturalism$_2$ that are based on Humean epistemology.

232

(b) Bhaskar (1998, p. 124) postulates two principles underlying the positivistic view. The first principle of *empirical invariance* functions as background to various aspects of a positivistic view of science. Empirical regularities or invariances establish laws. A consequence of this is the view that laws enable explanation of events. The symmetrical extension of explanation is prediction. Explanation is viewed as the ability to *deductively* infer observed events from a law and the initial conditions, which is classically expressed by the Hempel deductive-nomological or covering law model.

The second principle is that of *instance confirmation* which entails *"that laws are confirmed (or falsified) by their instances"* (Bhaskar, 1998, p. 124).[334]

(c) Underlying both principles stated above is the assumption of the world as closed (Bhaskar, 1998, p. 125). Closed systems are required for a constant conjunction of events and it is only here that a law can be observed. The problem is that laws function in open systems and closed systems are rarely found in nature (Bhaskar, 1998, p. 127). It has to be constructed in experimental work.

8.5.1.2   Transposing positivism to social science

The view that the positivistic view of science fit natural science well is probably due to the requirement of a closed system because scientists used closed systems to discover mechanisms underlying laws—the positivistic glove had a superficial fit in this instance.[335] The search for laws in social and human sciences is not as such futile (Bhaskar, 1998, p. 127), because Bhaskar (1998, p. 125) believes that they should be analysed as normic statements and thus as tendencies, but the fact is that they cannot be isolated in an artificially closed system as is the case with natural phenomena.

If social systems are fundamentally open then the required closure to identify laws is not possible. A number of positivist reactions[336] to the hitherto struggle to find substantive laws in the social sciences can be listed (Bhaskar, 1998, p. 125) (see the discussion on page 232 above). (a) The positivist view of laws based on the DN model is carried over to the social sciences where it was found not to apply, according

---

[334] It is not very clear why this is a second principle and why it should be so important.

[335] *"Positivism can now be seen to involve the illicit generalization of a special case"* (Bhaskar, 1998, p. 128) and *"Note that this allows us to explain why positivism has a degree of plausibility in the natural, as opposed to the social, sciences—viz. because its first-order condition of possibility (closed systems) is sometimes satisfied here"* (viz. in natural science) (p. 128).

[336] *"Humanists, hermeneuticists and other anti-naturalists, jointly comprising the anti-scientific romantic reaction which has always coexisted in symbiosis with positivism, have of course eagerly seized on this absence to demonstrate the refractory nature of society to scientific explanation (thereby of course implicitly accepting the positivist account of science). Positivists, for their part, have been forced either to modify their philosophical criteria and/or to cite, in extenuation, some feature of the social world to account for this gap between philosophical theory and substantive practice"* (Bhaskar, 1998, p. 125).

to Bhaskar (1998, p. 125). The problem of closed systems is fundamental because the rightful quest for laws/tendencies is maligned by upholding the DN-model whilst trying to make adjustments to accommodate the social sciences (Bhaskar, 1998, p. 126). (b) Social phenomena can be declared too complex, i.e. the invariances are too hard to spot. This is an interactionist[337] response and requires a more complete explanation. (c) A reductionist response entails the view that social phenomena should be explained at lower levels of reduction, i.e. one would need to work at, for example, a neurophysiological level to find more basic and *atomistic* explanations. Both interactionist and reductionist responses are based on the doctrine of regularity determinism discussed above.[338]

Interestingly Bhaskar (1998, p. 128) makes the conclusion that behaviourism or, at least a behaviouristic view of man, is a second-order condition[339] for the possibility of positivism. It is *second-order* because it grounds the first-order condition for positivism which is that of closed systems. Thus, closed systems are required for positivism, and the possibility for closed systems in the case of positivism is a spontaneously occurring closed system and a behaviouristic view of man.[340] Behaviourism can be viewed as a note resonating with positivism in social science. The so-called accepted positivist view of natural science was carried over to psychology as an attempt to bring psychology on the same scientific footing as natural

---

[337] Bhaskar (1998, p. 127) points out that "interactionism" involves mistaking generalising for abstracting. Interactionism is his (1975, p. 77) term for a totalizing explanation; usually it refers to the view of mind-body interaction (Mautner, 2000, p. 279).

[338] Bhaskar summarises his own argument so well that it is worth quoting in full: *"Now it will be remembered that I argued … that laws cannot be constant conjunctions of events, because such conjunctions (1) are extremely rare, and (2) must in general be artificially produced. On the first count one has the problem of what governs phenomena in open systems. The empiricist must either say that nothing does (weak actualism) or that, as yet, science has discovered no laws (strong actualism). On the second count the identification of laws and constant conjunctions leads to the absurdity that human beings, in their experimental activity, cause or even change (rather than merely empirically identify) the laws of nature. It leaves the experimental establishment, just as the first problem leaves the practical application, of knowledge without a rationale. Conversely, an ontology of transfactually active mechanisms irreducible to, productive of and occasionally (normally under artificial conditions) actually manifest in sequences of events, renders both processes immediately intelligible. Thus the correct corollary to draw from the absence of closed systems is not that there are no social laws (or that they are not strictly universal, that is, transfactually applicable, within their range). This would only follow if P1 were true. It is rather that … criteria for the rational assessment (replacement, acceptance, rejection, modification, diversification and development) of theories cannot be predictive. And so must be exclusively explanatory. Moreover once one allows that natural laws are normic, and transfactually applicable, the inadequacy of positivist and quasi-realist responses to open systems is shown up. And the problem, around which discussion has hitherto turned, of a difference in form between natural and social laws (explanations, etc.) disappears—to be replaced by an altogether different problem (carrying with it a different, and less radical, contrast) relating to a difference in the conditions for their identification"* (Bhaskar, 1998, pp. 127-128).

[339] The first order condition is closure (Bhaskar, 1998, p. 128).

[340] How does the behaviouristic view of man make a closed system possible?

science. However, as one of the conditions for the possibility of positivism, a behaviouristic view of man was necessary because it showed empirical invariances as possible in social science.[341]

8.5.1.3   Criticising the positivistic account of science

Accounts of science, and in this case then positivism, can be criticised on a number of grounds of which Bhaskar (1998, p. 120) points out transcendental, theoretical, empirical and methodological grounds. Transcendental problems arise when the possibility of science cannot be maintained on (positivistic) conditions such as a generalised closure and lack of intransitivity. Theoretical, empirical and methodological problems are all problems of theory articulation, confirmation and application (Bhaskar, 1998, p. 120). Theoretical criticism can be called immanent criticism because it focuses on the consistency within a theory. Explanatory criticism (or critique) can be identified as another type of critique along with transcendental and immanent critiques (Bhaskar, 1998, p. 121): explanatory critique is sociologically explanatory because it situates the account of science within actual (or lived) sociological contexts.

Empirical (or theory-confirmation) criticism focuses on the discrepancy between actual scientific practices and practices as envisaged in philosophical positions[342] (Bhaskar, 1998, p. 121). It is possible that philosophical positions on what science is can be far too idealistic because accounts should always be possible. This can only be known if actual historical and sociological analyses of science practices are done.

The last aspect of methodological criticism concerns the appropriateness of applying methods within a particular realm. Direct methodological criticism takes place when a view of science cannot be applied because it is as such inapplicable. However, indirect criticism is generated when such an inapplicable theory is applied (Bhaskar, 1998, p. 122). Indirect criticism can also be generated by applying an applicable theory. Indirect criticism consists of criticism on grounds of the *effects* of applying a theory. Bhaskar (1998, p. 122) distinguishes between overt and covert effects where overt effects are simply the consequences of the theory application whilst covert effects

> … *presuppose, or depend upon, for their generation and efficacy aspects of reality which the account denies or cannot sustain.* Furthermore, *Covert effects may function tacitly*

---

[341] I am not too sure if my interpretation is correct.

[342] Bhaskar (1998, p. 121) does not specify the position he has in mind, but merely contrasts the intricacy and complexity of scientific practice with "*the simplicity, monism and stereotypifying idealism of leading philosophical accounts.*"

or non-tacitly: in the former case they utilize (or depend on) an implicit contradiction, in the latter case an explicit one (whether it is recognized as such or not) (Bhaskar, 1998, p. 122).

The dependence on a contradiction for covert effects can be illustrated by positivism's inability to sustain open systems and stratification of reality: the result is that positivism covertly protects the CP clause which is *"inconsistent with its ontology"* (Bhaskar, 1998, p. 132).

The CP clause is first of all inconsistent with the positivist's implicit ontology, namely, a closed reality. However, it is used to protect its own theories from falsification whilst in other circumstances theories are criticised without the CP clause. Bhaskar (1998, p. 132) refers to, amongst others, Popper's (as a positivist!) strategy: theories in open systems invariably get falsified if they are interpreted in an actualist[343] manner (Bhaskar, 1998, p. 132). Thus, if an event is observed (in an open system) that is contrary to a predicted outcome the theory is regarded as falsified. There will always be events in an open system that contradict theoretical expectations because of its nature as an open system! In this instance, the CP clause is not used conveniently, but to protect their own positivist theories, a CP clause is invoked to take care of the unwanted events. As we have seen, positivist ontology (requiring a closed system) does not allow for the CP clause. The critical realist conception of natural reality does not require a CP clause in any case due to the principled denial of empiricist realism (cf. Bhaskar, 1975). Stated in other words: the CP clause is part and parcel of a critical realist view of reality so that it does not need to be stated each time a tendency is explained or described.

(a)   The transcendental refutation of positivism indicates that a positivistic account of science cannot be supported by the way the world is. Because positivism's view of science depends on closure, and as is apparent by now, closure is rarely achieved, the principled[344] openness of the world causes positivism to be an inapplicable account of natural science. The inapplicability is even more apparent in social science, not because laws cannot be found in the social or psychological world, but because these spheres are fundamentally[345] open.

---

[343] To reiterate, actualist means when an event "actually" takes place. The positivist assumption is that it also gets observed. Recall Bhaskar's empirical and actual levels of reality. Compare this with the definition of actualism in analytical philosophy where what is reals is actual in contrast to possibilism.

[344] I call the openness of the natural world *principled* because it is in principle open but closures can be effected. In contrast, the social world is *fundamentally* open because closure is not possible.

[345] See footnote 344.

236

(b)   According to Bhaskar (1998, p. 130) theory-articulation (theoretical criticism) problems cover aspects such as induction endemic to positivism. Recalling what was said about theoretical criticism above, namely, that it refers to internal inconsistencies or immanent problems, it would be clear that its deductive-nomological model cannot be applied to social science. The model presupposes closure and universality (cf. Bhaskar, 1998, pp. 124-125) whereas social theory, in general, presupposes open systems and historicity: problems arise when one tries *"to fit the model to a necessarily open and intrinsically historical subject-matter …"* (Bhaskar, 1998, p. 130).[346]

(c)   Theory-application problems arise from the actual application of positivism to the social science. However, it is not only particular to the social science, but as we have seen positivism is also inapplicable in natural science but for similar *and* different reasons. Positivism in natural science generalise a particular requirement, namely, that of closure, to be applicable to the (open) world. Thus, the transcendental refutation of positivism essentially invalidates it as an adequate account of science and the world (cf. Bhaskar, 1998, p. 130). Bhaskar stipulates the characteristics of social science that cannot be accommodated by positivism as (a) laws in social science are tendencies, (b) *"its subject matter requires totalization of phenomena bearing internal relations to one another"* (Bhaskar, 1998, p. 130), and (c) social phenomena are not observable.

If one characterises laws in social science as tendencies, it means that they function in open systems. Positivism cannot accommodate laws under the D-N model, which requires closure.

The requirement of totalisation of phenomena arises from Bhaskar's characterisation of what social phenomena are. They consist mainly of relations and can be described under some totality (Bhaskar, 1998, p. 43).[347] The difference between natural and social science does not lie in the fact that laws or tendencies do

---

[346] It is not clear to me whether what is posed here as theory articulation is not rather an applied problem. The theory articulation problem will be valid for those social theories

[347] *"Now most social phenomena, like most natural events, are* **conjuncturally** *determined and, as such, in general have to be explained in terms of a multiplicity of causes. But, given the epistemic contingency of their relational character, the extent to which their explanation requires reference to a* **totality** *of aspects, bearing internal relations to one another, remains open. However, even a superficially external relationship, such as that between Breton fishermen and the owners of the shipwrecked tanker* **Amoco Cadiz** *may, given the appropriate focus of explanatory interest, permit (or necessitate) a totalization revealing, for example, the relationships between forms of economic activity and state structure. This ever-present possibility of discovering what is a (potentially new) totality in a nexus accounts for the chameleon-like and 'configurational' quality of a subject-matter which is not only always changing but may (in this respect, like any other) be continually redescribed. Now although* **totalization** *is a process in thought, totalities are* **real**. *Although it is contingent whether we require a phenomenon to be understood as an aspect of a totality (depending upon our cognitive interests), it is not contingent whether it* **is** *such an aspect or not. Social science does not create the totalities it reveals, although it may itself be an aspect of them"* (Bhaskar, 1998, p. 43).

not apply in the one but in the other: laws apply equally in both, but the nature of their discovery (or description) differs. Closure is not possible in social open systems, consequently, tendencies are described and tested by means of explanations, i.e. redescriptions of relations (both internal and external) within totalities. Different descriptions or interpretations are possible because of the different ways one can configure the relations but I assume that the better explanation of theory 1 and theory 2 would be that one that incorporates more relations consistently under some totality. The positivist conception of law cannot accommodate the uncovering of social relations and totalities; the natural science counterpart is the uncovering of mechanisms/structures, and as we have seen, depth explanation cannot be thought in positivism (Bhaskar, 1998, p. 43).

The final characteristic of social phenomena is that they are not observable or as Bhaskar (1998, p. 45) said, they are necessarily theoretical. Positivism requires an empirical criterion for the reality of phenomena but this empirical criterion is linked to requiring closure (cf. Bhaskar, 1998, p. 45). Social reality is fundamentally open thus the criterion of reality cannot be linked to closure. It must be noted that the fact that the phenomena are unobservable are not, according to Bhaskar, the problem with positivism—of course their criterion of verifiability turns on "in principle" observability—but rather the fact that closure is required for a phenomenon that can only be manifested in an open system. As we know, a number of natural phenomena are unobservable but real such as magnetic fields (Bhaskar, 1998, p. 45): the criterion for their reality is indirect perception or causal effects. Even positivism can allow this criterion to some extent. The question then is how are social phenomena real? Bhaskar's (1998, p. 45) answer is that they are *"known, not shown, to exist"*. First of all, this means that social reality is concept dependent and by virtue of the interpretational relationship between agents and society/social phenomena, and between the interpretational relationship between scientists/philosophers and its subject matter (the agent-social relationship), it is known. Secondly, given the concept-concept relationship, social phenomena are known by their effects. Bhaskar (1998, p. 45) notes that social phenomena cannot be identified with their effects, but, they do not exist independently of their effects either!

The main point is that positivism cannot accommodate unobservable social phenomena that cannot be manifested in closed systems: to close them is to destroy them. They are manifest in open systems but by knowing their effects not by, to put it bluntly, seeing their effects.

Bhaskar mentions two additional aspects of theory application problems for positivism (a) Social science develop inconsistencies in their applications because of following both realist and approaches in their scientific practices. An example Bhaskar provides is Durkheim who acknowledges that causes are known by their effects but *"…spoils this by insisting upon purely nominal and operational definitions of such*

causes and rules, and working with Humean notion of laws" (Bhaskar, 1998, p. 130). (b) When positivism is inappropriately and stringently applied it serves to protect[348] certain social theories and maintain the status quo (Bhaskar, 1998, p. 131). [349] It must be remembered that positivism is inapplicable to social science, and it misleads social scientists to accept the so-called mark of science, viz., empirical testing (which, in effect, requires closed situations).

8.5.2   Critique of hermeneutics

It is Bhaskar contention that most of current hermeneutic positions reflect illegitimate positivist views of science. He (1998) analyses the views of Winch and then applies the principles to other hermeneutic positions in PN.

8.5.2.1   Concept dependency of social phenomena

In a discussion of Winch's (1958) view of social science, Bhaskar (1998) points to a number of issues pertinent to hermeneutics and how the linguistic turn is motivated. Winch's ontology of social phenomena is based upon the idea of strict concept-dependence. Thus, the reality of social phenomena lies totally within conceptuality with a negation of materiality. The central category of social reality is meaning while, in contrast, natural reality is based on events/state of affairs and its central category is causality (Bhaskar, 1998, p. 133). Winch, therefore, perpetuates the understanding of the central methods of natural/social sciences as explanation/understanding (Bhaskar, 1998, p. 133). Ontologically there is then a difference between what natural science and social science study. Social phenomena exist conceptually, consequently, they are dependent on agents' conceptions of them. When studying social phenomena, the conceptions the social scientist has also form part of the conceptuality of the social phenomenon. However, they are still real because conceptual does not mean fictional (Bhaskar, 1998, p. 134). In contrast to natural science—and this is where objectivity comes to play—the concept-object divide is not breached; what the natural scientist thinks about her objects do not influence the nature of the objects (Bhaskar, 1998, p. 134).

The exclusive concept-dependency for Winch motivates the process of how understanding of social phenomena should take place. Because social phenomena depend on agents' conceptions social phenomena can only be understood if we

---

[348] See also the discussion of covert implications of applying positivism stringently to social theories on page 28.

[349] *"Now the far greater implausibility of positivism in social science is reflected in the even more detrimental effects of its attempted application. These effects stem partly from its liability to initiate reductionist and interactionist regresses; and partly because the very absence of decisive test situations, coupled with continuing formal allegiance to a predictive criterion, serves at once to mystify methodology, protect entrenched (or otherwise privileged) theory, stunt alternatives and/or encourage (a belief in) the unresolvability of theoretical conflicts—which, in practice, means their resolution in favour of the status quo"* (Bhaskar, 1998, p. 131).

understand or tap into the agents' conceptions. This implies that no one understands the phenomena better than those involved (the community) in creating the phenomena. Bhaskar (1998) summarises it well:

> *For, given that the subject-matter of social science is constituted by the way on which agents conceptualize their conditions of existence, explanation is to be achieved by understanding (or, as it were, reconceptualizing) their conceptualizations; that is, by grasping the way in which they grasp (or understand) their existence* (p. 135).

Two problems, according to Bhaskar (1998, p. 135), follow for Winch's view, namely, social reality is exclusively conceptual and the epistemological primacy of the community which means the views of the community are infallible[350] (cf. Bhaskar, 1998, p. 155)! Bhaskar (1998, p. 136) counters these matters, first, by showing that social phenomena do have a conceptual and material side. Referring to Winch's own example, being in prison does not have only a conceptual aspect but involves the material fact that one is removed from society. Bhaskar (1998, pp. 136-137) also points out that beliefs also have a material side because they are always held in relation to some behaviour or social practise. Furthermore, beliefs as conceptual activities can conceal the true nature of an activity, which means that concepts can be wrong, or rather, do not reflect the true nature of a state of affairs. Accordingly, the second problem with Winch's view is that concepts are corrigible (Bhaskar, 1998, p. 137).

---

[350] I am quoting Bhaskar about Winch: *"The subject-matter of the social sciences has the unique property that it entertains beliefs about itself, and (for Winch) unless this were so, its subject-matter would disappear. Hence, as social scientists, our subject-matter must be defined by its criteria of significance and not by our own. For instance, to describe an action as praying (or voting) is to employ religious (or political) criteria, but what counts as praying can only be settled from within a form of life"* Bhaskar (1998, p. 135). Elsewhere, he also refers to the primacy of lay accounts of experience: *"Gadamer's hermeneutical heresy thus does nothing in itself to counteract the effects of the assumption of the identity of social being and thought. This inevitably results either in an absolutism, based on the notion of the incorrigibility of lay accounts or the self-authenticity of traditions, or in a relativism, generated by the collapse of an intransitive dimension in the domain of thought itself."* I think he has a point: the qualitative researcher regards lay experience as empirical data, which usually is taken at face value when analysing for themes, discourse and the like. See how Braun and Clarke (2006) regard interview transcripts. In fact, much care is taken to mirror the actual event by indicating pauses, and so on (Silverman, 2001). From this "truthful empirical data" interpretation can be done.

8.5.2.2   The transposition of the positivist epistemological structure
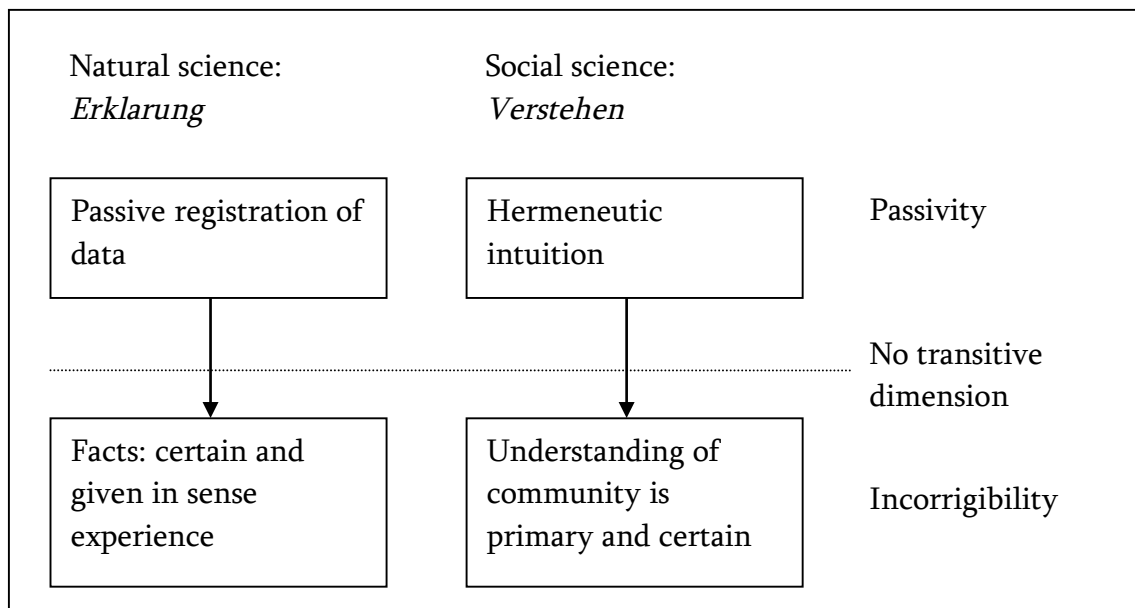
Figure 4 Epistemological structure of transposed positivism

The transposition of positivism to social science has an interesting structure (see Figure 4). The positivistic epistemological structure[351] for the natural science is based on passive reception of facts by an observer, and the facts are certain, final and given in experience. A similar structure is found in hermeneutics: in allowing the community to speak for itself passive reception of incorrigible facts are implied (Bhaskar, 1998, p. 149).[352] Bhaskar (1998, p. 150) puts it carefully: "*the community speaking for itself*"[353] refers to the conceptuality of the community that does not have to be reproduced by the investigator. The concept is merely transferred, **"*hermeneutically intuited, if not empirically sensed*"** (Bhaskar, 1998, p. 165). An important implication is that both positivism and hermeneutics (in this case we are still referring to Bhaskar's interpretation of Winch[354]) does not have a transitive dimension that means the direct transference of fact to theory/experience to interpretation[355] does not involve *work*.

---

[351] My paraphrase.

[352] *"The interpretation of the object-culture is definitive (certain) and the ideal social scientist investigates his or her subject-matter with a conceptual tabula rasa (passively)"* (Bhaskar, 1998, p. 149).

[353] My paraphrase.

[354] Bhaskar (1998, p. 151) points out that other hermeneutists, such as Dilthey, Schutz, Gadamer and Habermas harbour transposed positivist structures in their theories.

[355] "Interpretation" meant as the intuiting/sensing of meaning and not as reproduction or work involved in "remaking" one concept into another.

Bhaskar (1998, p. 152) contends that social experience is fundamentally relational as opposed to atomistic. Furthermore it should not be actualist, i.e. a social science ontology should, as the case is with natural science, be able to support stratification and differentiation (Bhaskar, 1998, p. 152).

8.5.2.3   The hermeneutic circle(s)

Bhaskar distinguishes between four hermeneutic circles as opposed to the one usually quoted as the condition for *Verstehen* as such.

(a)   C1 is called the *"circle of inquiry"* by Bhaskar (1998, p. 168) and it forms the background for understanding and applies to both natural and social sciences. This background presupposes already existing knowledge, which means that understanding cannot be without presuppositions.

(b)   C2 is called the circle of communication and refers to the conditions for communication or dialogue. This also applies to understanding in general. Bhaskar (1998, p. 153) shows that the conditions for communication are (i) overlap of some presuppositions otherwise communication cannot take place and (ii) difference or non-identity of content which is a necessary condition for communication. Any process where interaction takes place requires difference. Therefore, interaction such as dialogue, conflict, criticism, change, learning, teaching, argument and so on requires some imbalance because interaction or change cannot take place in an environment of homeostasis. Although this could be true of conceptual and material states in general, Bhaskar (1998, p. 163) focuses on conceptual states and says that *"every genuine … communicative act or episode"* requires *diversity,* and the diversity he refers to entails non-uniformity of beliefs and discrepancy in desires.

(c)   The third circle or C3 is the investigation of cultures and societies, and things such as traditions or as Bhaskar (1998, p. 155) says, it involves meanings *"expressed by other subjects."*

(d)   C4 entails an investigation of things or *"meaningful objects"* (Bhaskar, 1998, p. 153) or *"meanings expressed in other objects"* (p. 155). C3 has as its model listening (to subjects) while C4 has as its model reading of texts. Both circles apply to social science strictly and are not universal of understanding (*Verstehen*) as such.

C2 and C3 differ in that C2 focuses on meaning intent (i.e., the meaning the speakers in dialogue wants to relate) within a framework or as Bhaskar (1998, p. 154) says, *"a common context of utterance"*: C3 establishes the context of utterance. C4 is not concerned with meaning intent of the other speaker, as is the case with C2, because as we know from reading a text the original intent of the writer/speaker is lost, so to speak; much of the meaning of the text derives from the interpretation of a reader in a particular temporal/historical context.

242

How do these distinctions assist us in understanding the problem with the hermeneutic process? Bhaskar wants to unmask the positivist themes in hermeneutics or rather expose their implicit dependency on a positivist view of science. Thus, acceptance of the fact that social science is concept dependent leads Bhaskar to talk about a *double hermeneutic* in the case of social science. The distinctions he made between C1 to 4 explain the double aspect: there are two descriptions of social reality, namely, a lay one expressed by C3 and C4 (i.e., meanings expressed by other people and in other objects), and a social scientific description. Thus we have a double understanding of one phenomenon and the main question is what the relationship between these two descriptions is.

Bhaskar makes us aware of the danger of relying on Wittgenstein's linguistic turn where being is interpreted in terms of speech acts and language games:

There is neither identity nor homology between what is real and what is knowable, or sayable: the limits of language are not the limits of the world. Concept and object, even where the object is itself a concept, remain distinct and, in general dissimilar (Bhaskar, 1998, p. 142).

He finds Kantian or transcendental idealist roots in Winch that rests on a transposed Wittgensteinian position: this Bhaskar (1998, p. 133) calls in no uncertain terms the *linguistic fallacy*. This simply means that Transcendental Idealism, which examines the conditions for knowledge, becomes in Wittgenstein the examination of the conditions for language. Remember that Transcendental Idealism leads to the epistemic fallacy. The latter implies the collapse of ontology and epistemology in favour of epistemology (in short the conditions of knowledge function now as criteria for what is real and as Bhaskar showed, leads to an *implicit* empirical realist ontology). Similar conditions lead to the linguistic fallacy: being is collapsed within language, or stated otherwise, the intransitive dimension falls away.

Coupled with a philosophical position committing the epistemic and/or linguistic fallacies is the overextension of two related principles, namely, over-socialisation (Bhaskar, 1998, p. 141) of human behaviour and over-conceptualisation of social reality. The first refers to the reaction against individualism and individualistic atomism. In an attempt to rectify the modernist view of man an overextended socialised conception of man is advocated: everything is dissolved in social relations.

The second refers to a correct acknowledgement of the conceptual nature of social reality but with a denial of any materiality involved in social phenomena. However, the overextension goes further than this: "… *the equation of the conceptual and*

243

the essentially human holds good even in the case of basic biological activities" (Bhaskar, 1998, p. 134).[356]

8.5.2.4 Summary

(a) All communication presupposes the hermeneutical circle. Communication depends on two crucial conditions which Bhaskar (1998, p. 148) points out: (i) there must be difference and (ii) overlap or *mutuality*. In the first instance, communication cannot proceed if there is nothing to communicate about, i.e. if everything were the same there would be no need for communication. Thus, argument, communication, interaction and so on, all depend on difference between positions (such as conceptual or cognitive; difference in beliefs and desires). Difference is thus *necessary* for communication (Bhaskar, 1998, p. 148).

However, the must also be overlap because communication cannot proceed from two incommensurable positions and some mutuality makes communication *possible* (Bhaskar, 1998, p. 148). Bhaskar (1998, p. 148) concludes that *"Quite simply, there is nothing to be said **within** a form of life, only between them (however precisely such forms are individuated)."* This statement has an important implication for the type of interpretative stance Winch advocates. By immersing oneself into a community, i.e. by insisting on the primacy of the truth of the community, non-identity and mutuality become redundant, so that there is nothing to say! Of course, by not transgressing the boundary of the community, i.e. by not effecting partial overlap and maintaining absolute non-identity, communication is neither possible nor necessary. Overlap, I take, refers to the concept of a *"mutual horizon"* or *"common context of utterance"* (see Bhaskar, 1998, p. 154).

The four hermeneutic circles intend to circumscribe the different contours of understanding or communication.[357] To counter total immersion and, thus, isolation of the interpreter, circles C3 and C4 point to community intentions and products. To acknowledge the universal nature of understanding circles C1 and C2 point to the non-presuppositional, and communicate aspects of *Verstehen*. Thus, interpretation or understanding presupposes the possibility of communication and in its turn, communication assumes intransitivity. Intransitivity grounds difference and makes causal enquiry possible (cf. Bhaskar, 1998, p. 151). Understanding in the social science requires C3 (Bhaskar, 1998, p. 154).

(b) An important conclusion for social phenomena is that social being and thought are not identical (Bhaskar, 1998, p. 151). Bhaskar positions this claim on two

---

[356] Bhaskar refers to Winch (1958, p. 131).

[357] Does Bhaskar equate communication and understanding—or does he see communication as a condition for understanding?

244

levels: ontologically social being has a material side and epistemologically concepts are corrigible.

(c)   Bhaskar (1998, p. 152) contends that a social science[358] ontology must be formally non-actualist and materially[359] relational which means that the *way* it must be to account for social phenomena is *φ* or in this case, stratified. Stratification[360], as we know by now, is that mechanisms in deeper levels of reality account for higher levels of phenomena and a state of affairs. Thus, non-actualist implies not focusing on actual events taking place but pointing to deeper levels of reality. Importantly, social reality, albeit it conceptual (and material), is still stratified and not to be identified with its realisation although it cannot be known other than by its effects.

After determining *how* social reality is, i.e. stratified and thus non-actualist, its content, or *what* it is, can be specified. In this instance, reality is relational, and Bhaskar's transformational model of social reality must be remembered here. Accordingly, social reality involves both the individual (or agent) and the social in a transformational relationship to each other. Because it is relational it is neither *individualist* nor *ahistorical*. The effect of an *isolated* individual and an *ahistorical* society is in Bhaskar's (1998) own words the following:

*For the flat undifferentiated ontology of empirical realism, whether in pure or transposed form, always functions to the same effect: science becomes easy and history impossible. (The more self-evident reality becomes, the more effectively ideology is obscured.) And the sociology of individualism, whether in pure (that is, voluntaristic) or inverted form, squeezes out the mediating concepts (of class, power, interest, etc.) necessary to make sense of the arena in which both the action and the determination actually occur. For social life always occurs in a context which is prestructured and differentiated, in which socially differentiated individuals **act** (that is, articulate and apply) their various (and potentially or actually antagonistic) forms of life in the processes of social interaction and material mutation that reproduce (and transform) the totalities of internally related fields of force that comprise societies. Such acting is work, and such work is history* (p. 152).

---

[358] Why "social science ontology" rather than just "social ontology" (cf. Bhaskar, 1998, p. 152)?

[359] Formal mode and material mode was used by Carnap to indicate the particular uses of language. For instance, the formal mode of speech refers to aspects how language is used (e.g., "red" is an adjective), while the material mode refers to what is meant, for instance, "the red rose" (Mautner, 2000, p. 203).

[360] Is there a difference between differentiation and stratification?

245

CHAPTER 9 CRITICAL EVALUATION OF CRITICAL REALISM

In this section certain assumptions and principles of CR will be looked at from two perspectives, an immanent and a comparative perspective. By immanent I mean a critical look at internal approaches and assumptions whilst the comparative perspective will evaluate CR from the perspectives of the versions of realism discussed above.

My criticism of Bhaskar's CR is based on an internal inconsistency proceeding from his transcendental argument establishing the possibility of science. He correctly distinguishes between the transitive and intransitive domains, but his transcendental argument fails to sustain psycho-social reality and science. Although he acknowledges the fundamental social role scientists play in establishing scientific knowledge, his view of ontology and epistemology perpetuates disjuncture between social and natural reality. On the one hand, humans play a crucial role in experimentation to vindicate laws or tendencies beyond appearance and experience, but on the other hand he maintains the validity of the epistemic fallacy, namely that what we can know cannot establish what there is: logically ontology precedes knowledge and not the other way around. After finalising his argument in RTS, he attempts to naturalise social science and only manages to drive the wedge between the natural and social domains in further.

One consequence is the impossibility of closure in the social domain and by definition the social is excluded from experiment and similar methods than those in the natural domain. What is correct, though, is his insistence on the qualitative difference between natural and social/psychological objects (or rather generative mechanisms), namely the concept dependence of the objects of social science. He also conceptualised the relationship between the social and individual, acknowledging the role of agency to some extent. However, his starting point in natural reality and his consistent avoidance of idealistic/epistemological processes to establish some knowledge of the ontological maintains a dualism between domains.

One can appreciate Bhaskar's description of generative mechanisms and their fundamental role in causing things to happen (or not) and I think his three-stepped description of the scientific process is correct and very useful. The process of observing patterns, the postulation of models of mechanisms which are then empirically tested broadly reflects what scientists of various stripes do even if one must translate the experiment part differently for different sciences. I also think his argument on how realist assumptions explain this process better than, for instance, empiricist or idealist approaches is helpful to emphasise the necessity for taking a realist approach to science. I can even accept the principle of open systems for all domains of reality, even for astronomy contra Bhaskar (the enormous distances astronomers work with in their observations of events merely let their system seem

closed) and Bhaskar described his differentiated understanding of generative mechanisms very aptly. However, SiR's assumption of a unitary reality makes much more sense in removing disjunctures, substantively and methodologically. Bhaskar's wedge started with the way his transcendental argument is conceptualised and used and I would like to explore an alternative that manages to remove the wedge and that can sustain an egalitarian ontology.

The argument explored below is that a transcendental argument need not be subject-sided or idealistic to ground realism. Bhaskar is criticised for grounding the intransitive by means of an essential idealist strategy. Others, however show that a transcendental argument can be object-sided as well providing an alternative for grounding realism. Subject- and object-sided mean that the sensibilities and categories for understanding experience reside not only in the cognitive apparatus of the mind (idealism) but also can be found externally: both are required to make sense of experience and in the end sustain the possibility of scientific knowledge. Although Bhaskar, so the argument goes, comes out on the object-side of the equation he is fully aware of the necessity of unifying both.

9.1 Transcendental argument

9.1.1 Problems with the transcendental method

Bhaskar has been criticised for using the transcendental argument (Kaidesoja, 2005; Viskovatoff, 2002). Kaidesoja (2005) criticised Bhaskar's transcendental method by comparing it to Kant's manner of transcendental argumentation. In fact, Kant does not use the term "transcendental argument" but talks about "transcendental proofs" or "-deductions" (Kaidesoja, 2005, p. 33, footnote 8). Bhaskar views a transcendental argument as specifying the conditions for the possibility of certain practices, and as was clear from the previous chapters, it refers to the conditions for practicing science. Given that science is practised, the world (i.e., conditions) must be a certain way. Kant's argument revolves around the conditions for cognition and not around how the world must be. In order to succeed in perceiving and experiencing the world our cognitive apparatus must be constituted in a certain way. Thus, forms of sensibilities (such as time and space) and categories of understanding (such as causality, possibility, reality and substance), are the necessary conditions for experience (Kaidesoja, 2005, p. 33).

Of course, Kant indicates that the noumenal world exists, but it is impossible for us to know, i.e. it does not conform to the structure of our minds. Leaving the noumenal world aside, Kaidesoja (2005, p. 34) finds two differences between Kant and Bhaskar. The first is that the categories are what Kaidesoja calls, *"subject-sided,"* while with Bhaskar the structures of reality are object-sided (Kaidesoja, 2005, p. 35; Morgan, 2005, p. 441). This means that experience for Kant is determined by the world conforming to the mind's structures, while for Bhaskar the two are

247

independent; structures reside within the world and exist independently from our knowledge about that world (i.e., the transitive and intransitive domains).

The second point of difference is that scientific knowledge is restricted to *"possible objects of experience"* (Kaidesoja, 2005, p. 35). The world of noumena cannot be known in principle according to Kant, while Bhaskar assumes that knowledge of the intransitive is possible. Because the possibility of knowing the world is constituted by subject-sided categories, there are limits to scientific experience and knowledge (Morgan, 2005, p. 441). Hence, Kant's transcendent principles and transcendental method are idealist because it is subject-sided (Morgan, 2005, p. 441).

The main issue that Kaidesoja (2005, p. 42) identified as problematic in Bhaskar's account is that he wants to distinguish himself as a transcendental realist (or critical realist) although the main gist of his argument depends on transcendental idealist assumptions. The two positions are incompatible and Bhaskar (1975) goes to some lengths to distinguish his position from Kant's Transcendental Idealism. Bhaskar's retention of transcendental idealist concepts is clearly shown in his distinction between (a) a description of a scientific practice and actual (or empirical) scientific practice, and (b) the use of (transcendental) necessity in his arguments (Kaidesoja, 2005, p. 42).

(a) The first issue is the distinction between a description and actual scientific practice, i.e. Bhaskar confuses his description with the practice that actually prevails. The point is that Bhaskar fails to account for actual scientific practice because the experimental activity he describes is restricted to practices in chemistry and physics. According to Kaidesoja (2005, p. 40), the life sciences, medicine and psychology also use experimentation, but because principled closure is not possible, the control group in experimental setups are necessary. Kaidesoja proceeds from actual scientific practice in other sciences and does not accept Bhaskar's Critical Realist principle of a fundamentally open social world where experimentation is not possible.

(b) The second issue refers to the role of necessity in the second premise of the reconstructed argument. The argument is repeated verbatim for the sake of clarity:

X is generally recognized natural scientific practice

It is a necessary condition of the possibility of X that the world is $P_1, …, P_n$.

X is possible because it is real

If the worlds were $Q_1, …, Q_n$, is as presupposed in competing philosophies of science, then X would be impossible or unintelligible.

Therefore, it is conditionally (i.e. given that X exists) necessary that the world is P$_1$, ..., P$_n$. (Kaidesoja, 2005, p. 37).

"Necessity" is taken to refer to Kant's usage of transcendental necessity, which does not require empirical experience but is a priori knowledge. It can only be justified from a transcendental philosophical perspective and not an empirical one (Kaidesoja, 2005, p. 41). The dilemma Kaidesoja (2005, p. 42) points out is that Bhaskar needs to commit to Transcendental Idealism, which he clearly does not do, if he wants to justify the premise on an a priori basis. This transcendental necessity appears in the conclusion above as well.

Causality is such a necessary principle. Viskovatoff (2002) points out that causality for Hume was not a necessary connection between events but Kant could not accept this

> *... because if the principle of causality were not valid, that is, if one could not say that events of some type x are necessarily followed by events of some type y, then objects would not persist through time, and if objects did not persist through time, **self-conscious experience would not be possible*** (p. 670).[361]

For Kant, then, causality is a constitutive principle[362] as opposed to a regulative principle which is required for proceeding with an argument, the truth of which is not known (Viskovatoff, 2002, p. 701). An example of a regulative principle would be the "ordered" structure of nature that must be assumed in order to study nature: it may well be that we have established causality as an a priori category of understanding, but nature is merely a chaos of events which does not allow for ordering under a causal principle (Viskovatoff, 2002, p. 701). For the moment then we assume nature is ordered, but it might turn out to be otherwise, the order can become chaotic in future, or science stops progressing. Thus, the possibility of science cannot depend only on a constitutive principle but needs the regulative principle as well: *"because it does not follow from the principle of causality that the actual causal processes observed empirically will be such as to lead to any scientific understanding: nature might be so disordered as to be simply incomprehensible to humans"* (Viskovatoff, 2002, p. 701).

A last interesting point is that premise 2 and premise 4 perform the same function. X's existence or intelligibility is presupposed by premise 4. If this is the case, then it is not necessary to establish X on grounds of premise 2. According to Kaidesoja (2005, p. 42), Bhaskar (1998) wants to give more weight to premise 4 than he wants to admit, because he expends a fair amount of energy to criticising competing accounts of science.

---

[361] Emphasis mine.
[362] As Viskovatoff (2002, p. 670) says, it is *"constitutive of experience."*

In a discussion of Westphal's (2004) book, Morgan (2005, p. 445) counters Kaidoseja's argument above by stating that (a) the transcendental method need not be seen as idealist but is compatible with realism, and (b) because reality is of a particular nature, transcendental claims are possible. Thus, Kaidoseja articulates a strict dichotomy between subject-sided and object-sided (Morgan, 2005, pp. 441-442), thus rendering Bhaskar's use of transcendental argument invalid. However, Bhaskar presumably does not want to constitute such a disjuncture by positing the transitive and intransitive domains.[363] Returning to the issue of the validity of using a transcendental argument to justify a transcendental realist position, Morgan (2005, p. 440) states that the "transcendental" implies two important aspects, namely, an epistemological as well as an ontological one. It has an epistemological side because it justifies a certain form of knowledge. Consequently, as an object of thought, thinking about transcendental argument also requires a priori conditions (Morgan, 2005, p. 439). Thus, having a transcendental argument as content requires transcendental conditions. At any rate, it seems that the possibility of transcendental arguments depend on, or is made possible by the ability to characterise the species of argument as a transcendental argument.

It also has an ontological aspect because it presumes that certain principles transcend concrete manifestations of reality. It is irrelevant whether the transcendent aspects reside on the subject or object side in Kaidoseja's sense (Morgan, 2005, p. 440). The point is that they pertain to ontological objects. However, one can solve Kaidoseja's strict division between subject and object by combining both: "*In a tautological but non-sensical fashion, transcendental questions are epistemologically warranted precisely because aspects of reality are ontologically transcendental*" (Morgan, 2005, p. 442).

Viskovatoff (2002) also argues for the possibility of using transcendental arguments without committing to transcendental idealism. Idealism implies starting with a subject-sided analysis. One should ask what distinguishes Kant's Transcendental Idealism from social constructionism. Does Kant's subject-sided analysis imply social constructionism? The strong social constructionist holds that reality depends on the mind, thus, if there is no mind then there is no world. However, Kant strove to refute subjective idealism of this kind. Viskovatoff (2002, p. 701) points out that Bhaskar (1975, p. 27) conflates transcendental idealism and social constructionism: Transcendental Realism maintains that without thought (or science) there still will be a world and by implication that Transcendental Idealism holds that without thought there will be no world.[364]

---

[363] The particular relationship of what we, for now, can term the subject/object problematic, have been discussed earlier.

[364] Viskovatoff (2002, pp. 701-702) makes too much of Bhaskar's distinction or rather non-distinction between thought and science. The one implies the other (for Bhaskar) but Viskovatoff thought, human activity and cognitive activity as used by Bhaskar is ambiguous: it is not clear if it

However, Transcendental Idealism is not required for transcendental argumentation (despite Kant's insistence to the contrary). One can use transcendental arguments in Transcendental Realism because, as Westphal has shown, the ontological conditions for experience can be objective or external and not merely subjective (Viskovatoff, 2002, p. 705).

9.1.2   *Transcendental variations*

Lawson (1997) utilised a version of a transcendental argument for grounding economic theory. Viskovatoff (2002) discusses Lawson's transposing a transcendental argument for the natural domain to the social domain. Both transcendental arguments start from premises that are supposed to be shared by an opposing party. For instance, Kant starts with a premise that Hume agrees with, namely, the ubiquity of experience. If a person agrees that experience is pervasive, then one can proceed to specify the conditions necessary for experience to be possible. In the case of science, Bhaskar starts from an issue that the empiricists (and positivists) accept, namely, the role of experiments within science and he goes on to show that the possibility of science depends on the closure effected by experimentation. Experimentation shows that regularity can be achieved by closure, but it is only Critical Realism that can pose the universality of laws based on the regularities found in a closed situation. In the same way, the transcendental argument for the possibility of social science (and in this instance, economic theory) starts with the premise of the reality or existence of choice, and in the case of Lawson's argument, with freedom as well. Viskovatoff (2002, p. 704) says Lawson errs in choosing decision and freedom as assumptions for his grounding by means of transcendental argument because there are economists that might deny the ubiquity of these characteristics. It is thus better to find another apodictic starting point.

Viskovatoff argues that subject-sided transcendental arguments are possible and can be used within Critical Realism. A subject-sided transcendental argument does not require Transcendental Idealism although it still proceeds from the subject, or more precisely, from the apodictic certainty of experience (Viskovatoff, 2002, p. 706). According to Viskovatoff, it is far better to use an apodictic certainty as a premise (similar to what Kant did with Hume), rather than using a premise that some opponents might regard as true as in the case of freedom and decision-making ability as Lawson does. No one can dispute the reality of self-conscious experience. As a matter of fact, experience is not possible if causality does not exist; because objects

---

refers to transcendental activity or empirical activity of scientists. However, Viskovatoff's conclusion, namely, that for the transcendental idealist natural laws exist independently of thought once discovered empirically, does not depend on making a distinction between thought and scientific activity.

persist through time it enables one's experience of them.[365] Thus, one can construct subject-sided transcendental arguments that do not assume idealism.

Viskovatoff (2002, pp. 705-706) shows how such an apodictic assumption informs both the grounding of the natural and the social domains. Causality holds for the subjective experience of natural objects as said above. Viskovatoff (2002, p. 706) calls this machine-like or deterministic causality which is supposedly an unproblematic assumption in the natural domain. The certainty of experience establishes the objectivity of objects and lies in the natural domain. One cannot utilise the same deterministic principle in the social domain to ground social experience. In the social domain or with human action the situation is different. Causality for social or psychological experience cannot be deterministic because the possibility of error exists: I can mistake my self-conscious experience of a cat for that of a dog. The causality must thus be of *a different kind* while still ordering events sufficiently in order to make conscious experience possible. Viskovatoff (2002, p. 706) finds the "causal" principle in normative rules, albeit socially established. People follow rules in the social domain and these rules are normative but it allows for error on occasion (persistent error would make experience incoherent). The social causality Viskovatoff has in mind is then one that allows for error and subjective experience. Reasons often function as causes and do so normatively, meaning that one can be mistaken about cause and effect in the social domain (Viskovatoff, 2002, p. 706).[366] In this way Lawson could have employed an transcendental argument grounding the social domain.

Although the discussion above clarifies the way a transcendental argument works, Viskovatoff's assumptions about the mechanistic or deterministic view of causality in the natural domain can be questioned. Bhaskar argued cogently against a deterministic view of causality – sometimes powers exist unrealised! However, Viskovatoff emphasises an issue philosophy keeps trying to solve, namely the difference between the natural and social/psychological domains. His solution perpetuates dualism although one might argue that the underlying principle he works

---

[365] *"For self-conscious experience to be possible, I must be able to distinguish myself from objects, which requires that I be able to identify objects, which requires the objects to persist through time, which they would not do if there were not a regular causal relation between an object at one moment and the next. If the causal principle did not hold, the perceptions that we should have would be so disjointed that we should never be able to identify objects, something which would prevent us from ever attaining selfconsciousness. Thus, the causal principle must hold for the objects in our experience— that is, for nature"* (Viskovatoff, 2002, p. 706).

[366] Viskovatoff's (2002, p. 707) distinction between the way regularity operates in the natural and social domains allows him to motivate the application of mathematics to the natural domain: the natural domain is governed by mechanistic-regularity whilst in the social domain regularity is not governed by laws, thus mathematics cannot be applied studying its phenomena. The problem is Viskovatoff's fall-back to a positivistic view of laws, not as tendencies but as mechanistic regularities. Bhaskar argued convincingly that laws in an open system work against each other. I think Viskovatoff's transcendental argument for causality in the social domain fails.

252

with is causality; however, in the one domain it is deterministic and in the other error-prone. Anderson's Situational Realism clearly rejects different ontologies and the question is how one should proceed to a unitary ontology. Even Bhaskar's solution fails: the study of social reality can be naturalised to some extent but while the natural domain can be closed to some extent, the social/psychological cannot.

9.1.3   An alternative transcendental proof for realism

Westphal (2004) provides the necessary arguments to answer Kaidoseja's criticism of Bhaskar's transcendental method. However, his major contribution lies in utilising Kant for an alternative transcendental argument for realism that can only strengthen Critical Realism's case.

Westphal finds Kant's choice between a strict empiricism and Transcendental Idealism unacceptable. The result is that one has to start with Transcendental Idealism in order to utilise a transcendental argument (Westphal, 2004, p. 69). This is, of course, the point that Kaidoseja made in the discussion above. Westphal (2004, p. 71 and 76) shows that the link between Transcendental Idealism and transcendental argument in Kant is one of substantive argument and not a methodological issue and that substantive arguments do not provide adequate support for the link:

> *Kant's way of analyzing the conditions necessary for the possibility of experience is idealist. He argues along the following lines. The conditions for the possibility of objective experience are necessary because we contribute those conditions to the formal structuring of our experience. Space and time are merely the forms of our sensibility, and hence necessarily the forms of our sensory intuitions, while the categories (centrally) of substance and cause are basic concepts in accord with which we must, insofar as we have human understanding, structure our experience. We can be consciously aware of nothing that fails to meet these conditions, and conversely, 'in cognition a priori nothing can be ascribed to things except what the thinking subject brings forth from itse1f'*[367] *…, a premise he reiterates in a key passage in the B Deduction* (Westphal, 2004, p. 77).

Thus, Transcendental Idealism is wholly subject-sided. All the conditions required for having experience of the external world reside within the subject. In this sense the transcendental argument cannot do without Transcendental Idealism: asking about the possibility of experience of the world (the transcendental argument) the answer necessarily has to be idealist. However, Westphal argues that the same conclusion can be made without requiring the transcendental idealist point of departure.

---

[367] Westphal (2004) mostly did his own translations of Kant.

253

Objects must comply with certain criteria if we are to experience them (Westphal, 2004, p. 78). If this is true, then we can know those conditions a priori.[368] If objects do not comply with these criteria, then they cannot be accessible to us or experienced by us. However, we know of certain objects so they do comply with these a priori criteria. Thus, simultaneously, objects comply with certain conditions such as spatiality and our cognitive apparatus is structured with spatiality.[369] If either the object or mind did not have the property of spatiality, we would not be able to perceive the object. According to Westphal, Kant's analysis of sensibility alludes to requirements objects must comply with, especially with the discussion of the *sensory manifold* and *logical law of ge*nera.[370]

The link between transcendental argument and either idealism or realism, is according to Westphal (2004, p. 80) substantive, i.e. real, rather than methodological. In Kant it is the latter. Westphal (2004, pp. 82-92) motivates his claim by referring to three issues in Kant, which will be briefly mentioned. The first is Kant's (1998, A214/B261) argument against empty space. Empty space cannot exist because it cannot influence our senses. However, space is one of the transcendental conditions of experience and in Kant's terms,[371] necessary to organise or structure objects as a systemic whole to enable experience of objects to be possible. Westphal (2004, p. 81) points out that this line of argument is transcendental realist: empty space cannot have an effect on the senses, but space with the particular arrangement of objects

---

[368] *"However, there is an alternative way of analyzing the conditions necessary for the possibility of experience. One might hold that we can know a priori certain things about the objects of outer experience because there are certain conditions which outer objects must meet if we are to experience them. Only objects satisfying such conditions would be possible objects of outer experience; any objects not meeting those conditions could not be objects of our outer experience. If this were the case, these conditions could be known a priori. This view could allow, for example, that our intuitive capacity to receive impressions from objects other than ourselves has a 'spatial' form, in the sense that we are only sensitive or receptive to stimuli from spatial objects or events. If this were so, then spatiality would be a condition for the possibility of experiencing any object other than oneself This could be true even though having spatial characteristics, as a 'formal feature' of physical objects (a feature that allows them to be ordered), is an ontological condition for some range of objects (regardless of their being objects of experience). Only objects of that kind would be possible objects of our outer experience. Thus it would be conditionally necessary that any object other than oneself be spatial for one to experience it"* (Westphal, 2004, pp. 77-78). Emphasis mine.

The emphasised text states that *"these conditions could be known a priori"* if objects comply with certain conditions. Does this mean because we perceive books they comply with spatiality (amongst others) as a condition? But how do we know this a priori? The argument appears to express a *petitio principii*.

[369] *"Dazzled by his analysis of the intellectual conditions of knowledge, Kant's commentators have too rarely attended to Kant's analysis of its sensory conditions, some of which I highlight here"* (Westphal, 2004, p. 79).

[370] See Rosenberg (2005, p. 129 footnote 14).

[371] Kant (1998, A213/B260) says: *"Thus it is necessary for all substances in appearance, insofar as they are simultaneous, to stand in thoroughgoing community of interaction with each other"*.

254

does or is required for experience.[372] The substantive link between the transcendental arguments and Transcendental Idealism is not as substantive as Kant thought.

The second issue pertains to Kant's argument for Transcendental Idealism based on the rejection of empiricism. Westphal (2004, pp. 83, 84) points out that Kant's choice for Transcendental Idealism is a *non sequitur*: To argue that the a priori conditions for experience cannot be empiricist and, thus, must be subjective, is invalid.[373] The third option is a transcendental realist one.

The last flaw Westphal (2004, p. 87) indicates in Kant's arguments refers to one of the conditions of possible experience. It is not as such a flaw than a possibility of a contradiction in argument. The transcendental conditions for experience are, on the one hand, subjectively grounded, i.e. a person cannot have experience except by means of the categories his/her mind imposes on the world.[374] It is transcendental and a priori because it precedes experience.[375] It is also subjective and intuitive[376] because it is subject-sided. On the other hand, Westphal (2004, p. 87) argued that Kant himself showed a *"necessary, formal, yet nonsubjective"* condition for possible experience which is the *"manifold of sensation"* Kant (1998, A19/B33). Westphal (2004, p. 90) also said that Kant cannot have it both ways because his Transcendental Idealism cannot allow for an objective condition for conscious experience, and consequently it is played down to some extent. The argument that establishes the formal and material conditions for the possibility of conscious experience assumes the coherence of sensations enabling the subject to experience objects and not a chaotic multitude of sensations. Thus, from the environment we receive a multitude of sensations, or there exists a manifold of sensations that the subject needs to organise coherently in order to experience objects. This organisation can at most be a reconstruction[377] and not a construction, because the human mind cannot construct intelligible objects or representations of objects from a chaotic mess of sensations:

---

[372] *"He grants that empty space is a logical, ontological, and even a physical possibility. He only denies that we can experience empty space. Why can't we experience it? The reason he gives immediately beforehand is that empty space cannot transmit any sensory stimulation to us. This comports with his view that space itself is not an object of perception because space itself cannot stimulate our sensibility. Kant's putative result is that empty space simply cannot be a source or object of experience because it is incapable of affecting our sensibility (of providing us sensations), either directly or indirectly (as a medium)"* (Westphal, 2004, p. 81).

[373] *"Kant's inference from transcendental conditions of the possibility of experience to Transcendental Idealism, … is a non sequitur. It is a non sequitur because Kant's disjunctive syllogism, his argument by elimination, does not concern all the relevant alternatives"* (Westphal, 2004, p. 85).

[374] Westphal (2004, p. 90).

[375] *"This concept must be a priori because without it we could neither identify objects or events we experience, nor, on that basis, either define or acquire any empirical concepts"* (Westphal, 2004, p. 89).

[376] Westphal (2004, p. 87).

[377] *"On this view, the 'objects' we experience and to which we refer must be (re-)constructed, where some properties of those objects derive from constituent sensations and others derive from synthetic metal activities"* (Westphal, 2004, p. 88). See also Westphal (2004, p. 90).

there must be some structure already within the manifold or mass of sensations coming to us, even if it is minimal structure.[378] There must be some transcendental affinity[379] of the sensory manifold as an objective (meaning "material" and "formal") condition for experience.[380]

Westphal provides a convincing alternative for realism than Bhaskar's transcendental argument that can only strengthen CR's position. The world is, at least, minimally structured in a certain way in order to make experience possible. Thus, both subject and object provide structure. Morgan (2005) asks how philosophers managed to perpetuate the strict subject-object division since Kant, despite the realisation that both the world and minds contribute towards conscious experience? Morgan (2005, pp. 448-449) provides two possible reasons, namely, (a) Kant did not have access to a Darwinian evolutionary worldview and (b) idealism and empiricism were main topics of philosophy in Kant's time. Firstly, the scientific worldview in Kant's time did not allow for the evolutionary adaptation of organisms to the demands and requirements of the environment. Currently, we realise that subjectivity (and consciousness) is as much a response to environmental demands and adaptations as it is part of the reality we live in. Thus, for us Kant's allusions to the affinity of the sensory manifold with its implications seem perfectly reasonable from an evolutionary scientific view.

Secondly, the choice between idealism and empiricism was dealt with in the discussion of Westphal's (2004) criticism of Kant above. By denying the validity of empiricism a commitment to idealism is not implied. Stated more carefully: Kant's

---

[378] *"To fill either a an experiential or cognitive role, sensations generally must carry some primitive level of information about sensed objects, if that material is to play a role in our experience or knowledge of those objects"* (Westphal, 2004, p. 89).

[379] *"I call this objective ground of all association of appearances their affinity. But we can never encounter this anywhere except in the principle of the unity of apperception with regard to cognitions that are to belong to me. In accordance with this principle all appearances whatever must come into the mind or be apprehended in such a way that they are in agreement with the unity of apperception, which would be impossible without synthetic unity in their connection which is thus also objectively necessary.*

The objective unity of all (empirical) consciousness in one consciousness (of original apperception) is thus the necessary condition even of all possible perception, and the affinity of all appearances (near or remote) is a necessary consequence of a synthesis in the imagination that is grounded a priori on rules" (Kant, 1998, A122-123).

[380] *"Transcendental affinity of the sensory manifold is a 'formal' condition for the possibility of experience, because it allows objects to be ordered. However, it is neither a conceptual nor an intuitive formal condition. Instead, it is a material condition of the possibility of self-conscious experience, because it directly concerns the characteristics instantiated by a manifold of sensations or (analogously) sensory intuitions. I contend that, on Kant's own principles, the transcendental affinity of the manifold of sensory intuition can only be reconstructed, but not constructed, by intellectual syntheses of the understanding. Kant explicitly claims and argues otherwise. However, his arguments for this claim mistakenly conflate the ratio cognoscendi of the transcendental affinity of the sensory manifold (which lies in the transcendental unity of apperception) with its ratio essendi (which must lie in source of sensations). Showing this requires making some basic distinctions among the regulative and constitutive issues Kant addresses under the heading of 'affinity'"* (Westphal, 2004, p. 91).

refutation of subjective idealism and rejection of empiricism need not commit one to critical idealism (Morgan, 2005, p. 449).

9.2 The consequence of Bhaskar's wedge

One consequence of a lopsided transcendental argument is a perpetuation of a Cartesian dualism: either the mind or the world. I have not made a strict division between social and psychological realms or sciences but for this study assume that both sit on the subject side of reality. The transcendental conditions for conscious experience and for scientific knowledge lie in both "worlds." The constitution of different worlds or ontologies was noticed by Cruickshank (2004) albeit from a different perspective and is discussed next. Benton (1998, p. 301), in the next section indicates that Bhaskar fails to unify natural and social science, another result of the latter's transcendental wedge.

9.2.1 Two ontologies

Critical Realism, especially that of Bhaskar and Archer's (1995), has been criticised as hegemonic. Cruickshank (2004) pointed out the contradictory assumptions inherent in Critical Realism's views about ontology. On the one hand, one has the requirement to avoid the epistemic fallacy, i.e. the prohibition that ontology cannot be reduced to epistemology, and on the other hand, one has the claim that ontology is intransitive. This intransitivity dictates how ontology should be viewed, and in Bhaskar's case, it is structured and fundamentally open. This view, according to Cruickshank (2004), is held almost dogmatically as an infallible statement of how reality must be if science is to be possible. Critical Realists regard this view as the only true view of what reality is, and this holds for the natural as well as the social domains. Cruickshank (2004) says that Critical Realists will deny this dogmatic and infallible stance because they are in principle non-foundationalists and employ a fallibilist epistemology. Critical Realists are careful not to commit the epistemic fallacy meaning that work done in the transitive domain cannot be mistaken for the intransitive domain. What happens in the transitive domain is always fallible and in principle revisable.

The problem, according to Cruickshank (2004), is that Bhaskar defined the epistemic fallacy far too wide so that even his own view of ontology commits this mistake. The only way out is

> … *to step outside knowledge to 'see' reality in itself. Talk of ontological assumptions in science having a degree of veracity would not be sufficient to avoid this fallacy as those ontological assumptions would be located in epistemological conceptual space: they would be assumptions in the transitive domain. So questions about reality would be posed in terms of what we knew about reality rather than in terms of the intransitive domain being directly translated into a language that mirrored that domain directly* (Cruickshank, 2004, p. 572).

257

Thus, on the one hand, Critical Realism wants to maintain a specific view of ontology applicable to the natural domain and apply this ontology to the social domain. The question is how we know they are correct about the intransitive domain given that none of us has the ability to step outside the transitive domain to obtain a God's eye view of reality. If Critical Realists argue for the unconditional applicability of their view of reality, then they are acting in a hegemonic manner, and commit the epistemic fallacy. The Critical Realist should be able to admit that her transitive view of reality might be wrong; her view remains transitive and epistemological. Consequently, if Bhaskar pronounces social reality as fundamentally open, he could be wrong. In the same way, no one can theorise about social (or natural) reality without keeping avenues for critical debate open, if they acknowledge the validity of the epistemic fallacy.

Cruickshank (2004, p. 573) counters Bhaskar's argument that he distinguished between a philosophical ontology and an ontology based on current scientific knowledge. The latter is clearly within the transitive domain, whilst the former, because it is based on a transcendental argument, somehow reflects the actual or true state of affairs. The philosopher, then, has access to true ontology, but according to Cruickshank, we have no grounds to claim this: even the philosopher's view is argued from within the transitive domain. The ontological cannot be claimed from within an intransitive domain.

9.2.2 A perpetuated dualism

Benton (1998, p. 301) contends that Bhaskar's naturalism in social science is essentially anti-naturalist and a dualist one at that. Bhaskar in PN wants to remove the opposition between social and natural science in order to argue for a possible naturalist social science, but in the end *"reconstitute(s) that opposition"* (Benton, 1998, p. 309). This implies, according to Benton (1998, p. 298), that Bhaskar manages to establish the polarity in another manner despite his attempt to move between the polarities of hermeneutics and positivism.

Bhaskar in RTS viewed natural science and experimental science to be one and the same (Benton, 1998, p. 301). Similarly, social/human sciences correspond to non-experimental science. This is one of the fundamental restrictions in Bhaskar's theory: natural science cannot be limited to experimental science. Of course, Bhaskar (1998, p. 168) realised this with his amendment and reaction to Benton's critique: physics and chemistry were meant to be used as prime examples, examples which are used by positivism and its critics alike. It is doubtful whether this admission can deflect the threat of methodological monism so pertinent in positivism's composition. It is still present when Bhaskar notes that experimentation in the social science is not an option but that a replacement or proxy for experimentation must be found.

258

The differences between natural science and social science were pointed out earlier. Bhaskar indicated that naturalism in the social science is limited by (a) the possibility of closure of the intransitive domains of the natural and the social. The social is fundamentally open but not the natural. (b) The transient nature of social versus the enduring nature of natural structures. (c) The dependency of activities on the existence of structures: natural structures exist independently from the activities they govern, while social structures do not. (d) The concept dependency of structures. Social structures do not exist independently from the concepts of its agents, whilst natural structures and knowledge of them exist independently. Thus, the transitive and intransitive domains are separated. Benton (1998, p. 309) argues that by demarcating the differences between social and natural science in the manner of *ontological* limits, Bhaskar merely reinforces social science as anti-naturalist.

9.3   A naturalised realism

What would one call a realism that accounts for both the psychosocial and natural domains or *modes* of reality? Or rather, what would a transcendental argument accounting for both sides be known as? One is used to making distinctions such as subject-object although SiR demands that one views them as ontologically on the same level. This habit forces us to distinguish between subject and object-sided categories but even SiR still allows things to be distinct yet related as long as relations do not constitute things. One might imagine that talk of subject and object is a matter of perspective (similar to first-person and third-person perspectives on consciousness) but I would like to emphasise the naturalist assumption that the psychosocial and the natural domains belong together. Realism implies existence independent of the mind but not existence of mind independent from the natural world. Understanding takes place within the natural world and requires the natural domain as much as it requires the mind and occurs through the mind.

9.3.1   *Models in science: epistemic access to reality*

Bhaskar (2008, p. 4) views the issue of models as central to his conceptualisation of the 3-phased process of science. After observing regularities the scientist uses her imagination to provide a model for the explanatory mechanism underlying the regularity.[381] The model also comes into play when it is empirically tested by means of an experiment (Bhaskar, 2008, p. 136). Thus, models are crucial in the explanatory process and postulate causal mechanisms. Bhaskar (2008, p. 139) calls the mechanism the *surplus element* required when formulating a causal law because laws on their own cannot explain constant conjunction of events or

---

[381] *"Just as Transcendental Realism differentiates itself from empiricism by interpreting the first stage of the dialectic as the invariance of a result rather than that of a regularity, so it differentiates itself from Transcendental Idealism in its interpretation of the second stage. Both Transcendental Realism and idealism see the move from (1) to (2) as involving creative model building, in which plausible generative mechanisms are imagined to produce the phenomena in question"* (Bhaskar, 2008, p. 136).

regularities. It is the generative mechanism that allows one to distinguish between contingency and necessity. A model provides an explanation of necessity in nature: *"For Transcendental Realism the surplus-element distinguishing a law-like from a non law-like statement is the concept of the generative mechanism at work producing the effect in question"* (Bhaskar, 2008, p. 148). This much Bhaskar (2008) and Mäki (2011a) have in common. However, models in natural science always need to be empirically tested for veracity by means of experiment in a closed system. The natural domain can be closed to some extent while this is not possible in the psycho-social domain that is open and difficult, or even impossible, to close at various points. However, Mäki (2011a) showed how models provide epistemic access to unknown and/or unobservable mechanisms, as well as how they might be regarded as true with respect to these mechanisms in psycho-social domains. His argument for models as experiments in certain circumstances provides the social scientist with an avenue into psychosocial reality by means of conceptual experiments in contrast to material experiments. Material experiments are however not outside the reach of the scientist working with psychosocial reality.

Bhaskar (2008) correctly pointed out some characteristics of models that resonates with the view of Mäki (2011a), such as postponing the issue of truth of models to a later stage. In fact, the use of models allows older and falsified models to be superseded by new and more accurate ones (Bhaskar, 2008, p. 150). Consequently, science is practiced and knowledge produced when models are tested against reality.[382] Mäki goes further by suspending the requirement for truth and falsity of models differentially for different scientific endeavours. In the end, it is the truth of the causal mechanism that is at stake even if all the assumptions of a model are false. The progressive relaxation of assumptions to test the model by means of isolation is not the only way a model can be tested. Of course, in the case of natural science and concrete experimentation, isolation and control is a sine qua non for a closed system, while Mäki allows for a movement beyond mere closing of systems. In a sense, models postulating generative mechanisms and tested conceptually and empirically by holding elements constant are the psychosocial version of a closed system. This conclusion vindicates Anderson's claim of an egalitarian ontology.

Taking the concept of the overlap between experimentation and modelling further, Harré (1998a) says that experiment can be viewed as the domestication of nature. He argues against a number of post-modernist conceptions about experiments that dissolve them into mere verbal constructions. He also argues against the view of the experiment becoming transparent, as if it is not there, when one makes conclusions about mechanisms and tendencies in nature. The important

---

[382] Bhaskar (2008) also regards the relationship between a model and its target as analogical and views analogical reasoning just as valid as the other forms (such as deductive, inductive, and so on). A model allows us to imagine something of the target or unknown in terms of the known.

point in his discussion is that experiment functions as a material model of reality or nature. A *concrete* model can be contrasted with the usual understanding we have of a model, namely, a *conceptual* model. A conceptual model is of the same species as conceptual frameworks that include theories and paradigms. The conceptual model functions as a metaphor with similarities but also important differences from the phenomenon under investigation. It is the same model concept Bhaskar utilises in his view of natural science.

However, the material mode, despite its similar metaphoric intentions and functions, is concrete on a more fundamental level. It is both nature and metaphor. Because it is concrete it is nature and not only a representation as is the case with a metaphor; it is nature tamed or domesticated. The example that Harré uses is that of a cow being the domesticated version of the wild. Another beautiful and apt description is his reference to experiment as not totally art and not totally the zoo! A cow is domesticated, or in the words of, Bhaskar a controlled wildebeest. This means that it is a closed system, and here Bhaskar and Harré's images overlap.

I have stated my objection to Bhaskar's and other Critical Realists' view of the impossibility of experimentation in psychology or social sciences. They make the same category mistake as they accuse others of doing, namely, tumbling down the rabbit hole of illusion by succumbing to the epistemic fallacy. The argument for the inability to find closure in open systems such as the social world precludes the possibility of experiment. Where does this principle of closure come from? Of course, Bhaskar will say it is ontologically grounded based on his transcendental argument for the possibility of science, but I would like to demonstrate that it is but only an epistemological inference.

The second argument for the possibility and intelligibility of experiment capitalises on the same transcendental argument: social scientists do experiments, thus, it must be possible to derive knowledge from social and psychological domains. The main argument against positivism, and rightly so, is that it does not reflect scientific practise and it cannot, and should not, prescribe to scientists how they should practise their science. In a similar vein, one can argue that the same is true for social science (and the humanities!). The admonition to the philosopher is not to be prescriptive—it still remains the handmaiden of the sciences—but to describe and analyse. As CR says on more than one occasion, logic cannot dictate the possibility of what happens: ontology is primary, so we need to investigate the possible (of course the scientist needs to guide us, i.e. indicate the content) and clarify what is happening.

9.3.2 Critical Realism and Situational Realism

Anderson's Situational Realism and Bhaskar's Critical Realism have many common threads that Hibberd (2010, pp. 38-39) summarised succinctly: ontology is

logically prior to epistemology; both see the task of philosophy as identifying the conditions of existence from a realist perspective; an atomistic ontology is rejected and both approaches employ the method of immanent critique. This form of critique aims at inverting an opponent's denial/renounce, i.e. to show that he/she implicitly accepts what is explicitly denied.[383]

A major difference between Bhaskar's Critical Realism and Anderson's Situational Realism is the levels of reality thesis (Hibberd, 2010, p. 42). Bhaskar's (1975) thesis of reality stratification is well known: reality is stratified as the empirical, actual and real. Anderson simply says that reality is a single way of being. What CR views as independent, namely, mind and nature, SR views as one. Thus, Anderson's realism involves a stronger ontological claim and it avoids dualism consistently.

This point is so important that it is worth emphasising: according to Mackay and Petocz (2011b, p. 37) in realism *"The copula **is**, is the great leveller"* and even when objecting to realism, namely, to claim that what the realist says about reality is merely assumptive, then one is also making a claim about reality! By implication what psychological theories imply about some claims (such as about logic or mathematics as one example) as existing in thought, and because it does not have a tangible presence it is not real, is plainly wrong. Psychological events and experiences are real: they function as explanations for behaviour. Mackay and Petocz (2011b, p. 38) make an interesting distinction between reifications and real psychological events. Real psychological experience is not the forerunner of neuro-chemical events as the real explanation of experience: psychological experience cannot be divided into its constituents. How do they differ from reification? Reification is the reality ascribed to cognitions in the mind and based on the representational theory of mind.

The principle of constitutive relations also addresses problematic issues in the psychological and social spheres. Although Harré's (2002b) concept of powerful particulars can be used against CR, from a SiR perspective it commits the mistake of constitutive relations and violates the principle of a unitary ontology. Powerful particulars are bound within the *xR* segment of the *xRy* formula and could not serve as a proper explanation for behaviour (Maze, 1983). By proposing an inverted structure of human functioning, Harré (2002b) violates ontological egalitarianism and unwittingly perpetuates dualism.

9.4   Conclusion

SiR is grounded in the principle of independence which means things or situations are spatio-temporally located. This localisation further implies that things are distinct and that, in a world of objects and events, the *aRb* structure holds. Things

---

[383] As Hibberd (2005) does in her discussion of social constructionism.

stand in relationships but neither the subject nor object is constituted by one another or by the relationship. Furthermore, things happen in situations and a situation allows one to simultaneously apprehend distinctiveness of things and their complexity. Complexity also implies multifariousness of cause. Things are multiply determined.

The doctrine of distinctiveness and relations also has a serious impact on views of the mind and meaning. Knowledge of something resides in the relationship and not in the knower or the known. Anderson, consequently, also rejects representationalism as basis for the functioning of the mind. In fact, any form of a mediating entity is rejected as symptomatic of idealism, and for Anderson (1962) idealism is *anathema*.

Anderson's emphasis on space-time as the location for where things happen in situations and with all the complexities that goes along with it, grounds historicity of situations fundamentally (Hibberd, 2011, p. 139).

Social sciences and psychology do not require a different ontology than that of natural science because all events and situations occur in space-time. In fact, Hibberd (2011, p. 150) states that Anderson's ontology might serve as a *"foundation for a thoroughly integrated natural and social science. Under the general categories of existence (occurrence) and with an account of causation as 'interaction at all points', Anderson's realism unifies."* However, Hibberd (2011, p. 140) is of the opinion that Anderson would have regarded current psychology as "pseudo-empirical." Current psychology conforms to voluntarism, representationalism and atomism with a strong disregard for the fundamental categories of being (Hibberd, 2011, p. 140). The fact that these categories describe the way things are, in principle, places no pressure on the social science to examine its own methods and assumptions.

Although the sciences differ in content and topic, all comply with the same categories. However, this does not require one method but method depends on the phenomenon under investigation. It follows that measurement is not the hallmark of science, neither is qualitative approaches exclusive to the social sciences. The only important common denominator in terms of method is as both Bhaskar and Anderson claim, difference, which opens the avenue to critical enquiry.

Despite the important clues SiR gave us for reconceptualising psychology against the background of realism as a metatheory, there is one aspect that still needs to be clarified. SiR builds upon the structural nature of reality, emphasises reality's situatedness, and thrusts ontological egalitarianism on the stage. I have considered the relationship (*R*) to some extent and showed how the object cannot be constituted by either R or the subject. Further clarity is required about the subject or the first term in the relationship between knower and known.

263

A main concern is Bhaskar's and other critical realists' exclusion of experimentation in social and psychological science. Experimentation does happen in psychology, so why should we not utilise this within a transcendental argument for the possibility of experimental science in social science? However, I soon realised that the fact that something is taking place or is regarded as natural sound scientific practise by the majority of psychologists in the world does not make it true or valid. The way I understand a transcendental argument à la Bhaskar is because a thing exists one is allowed to ask about the possibilities of its existence. Science is practiced and is real, accordingly, we can find the conditions for its practice.

Although the way I pose the TR argument might sound convincing, one can apply it to other human practices as well to see how well it holds as an argument. To first use an innocuous example: having two million people belonging to the order of the unicorn does not guarantee the reality of the unicorn (a fact the believers all attest to). A second, closer-to-home example is the following. If most of psychologists in the world believe that they are measuring a real phenomenon when they measure Neuroticism on the NEO-PI-R, is the reality of that construct established (Trull, Useda, Costa Jr, & McCrae, 1995)? If we can show that on a realist understanding of measurement that the quantitative imperative is false and ubiquitous construct hypostatisation[384] is invalid, then we can declare certain "scientific" practices in psychology as misguided and false. I will address this issue below (cf. paragraph 2.2.3).

Taking the implications of the TR argument further: if we move on to social science, particularly sociology and psychology, and their ontologies then, from Bhaskar's reasoning' the TR argument cannot be used for the social domain. It only applies to the natural domain where principled closure is possible. Experiment is not possible in the social domain given its principled openness. We can say that scientific practice in social science shows us that it is possible and taking place, thus the TR argument can be utilised for the possibility of naturalism (in the social domain). Either Bhaskar is wrong based on his own account or social science practices are invalid based on the argument in the previous paragraph.

The possibility of closure as applied to the natural and social domains results in ontological dualism with Bhaskar. His argument for stratification in the natural domain is applied in the social domain although the nature of the mechanisms and strata are a bit different, but this opens the door to a levels-of-reality thesis. The natural and social domains have different strata of reality but also differ from each other. A result of this view is a perpetuating of Cartesian dualism with all the ramifications it causes for psychology and psychology as science. An indication that Bhaskar does not regard Cartesianism in psychology as a problem might be inferred

---

[384] I am looking for a term or expression to indicate the tendency to reify concepts.

from his quick dismissal of central state materialism discussed in a previous chapter. This and related issues will be discussed in this chapter. Bhaskar's view of the social domain seems to veer in the direction of, in his own words, Transcendental Idealism rather than realism, and as the discussion of New and Situational Realism will show, to be realist means to get rid of the last vestiges of idealism.

CHAPTER 10   PSYCHOLOGICAL SCIENCE

Most of the work assessing Bhaskar's work has been done. What remains is to examine the possibility of negotiating the way between the mind's contribution and what external reality provides in order for cognition to take place. The principles discussed in the previous chapters reflecting the possibility of a Naturalist Realism will be examined in the views of the New Realists. As with Anderson, their views are based on an opposition to idealism. Their psychology is based on direct idealism, thus, any form of representationalism should be denied. Effectively, they are espousing an externalism, i.e. everything that is needed for understanding and studying human psychological behaviour is externally accessible and available. However, the New Realists would also like to avoid behaviourism, the variety of psychology with close allegiance to positivism's image of science. In discussing their views one can see the struggle to avoid idealism without embracing strong versions of behaviourism.

The difficulty of negotiating epistemic access to psychological reality from an object-sided perspective emphasises the fact that one cannot deny subject-sided structures. I take this difficulty as an indication of the likelihood that a balanced subject/object-sided, thus naturalist, approach might be more feasible to pursue epistemologically. Rom Harré's apparent constructionist explication of psychological reality, despite his realist leanings in the natural domain of reality provides some direction to what can provide epistemic access to the psychological (or psychosocial) mode of reality. Language and discursivity defines the psychological level for reality for Harré. Based on Anderson's realism, namely that reality is structured to such an extent that as soon as we make ontic claims about this reality, discursivity is a natural outcome, namely it opens up debate, criticism and counter-claims. Epistemic access is thus possible, in natural as well as in psychosocial modes, by means of the fact of discursivity.

Without granting social constructionists and relativists exclusive privilege to the process of discursivity and thus the ability to question any ontic claim, it can be seen that language and discursivity are characteristic of how we deal with reality in any case. Taken systematically, discursivity becomes critical enquiry in the case of the practice of science. In this way we solve the problems different methods, such as quantitative and qualitative, pose. Measurement, thematic analysis and so on are ways of discovering reality or rather the causal and generative mechanisms of the different modes of reality.

However, we need to make one last point, namely, the one that Carnap and Schlick as examples, raised. The Logical Positivists reduced meaning to an observability criterion. In a sense, their own struggles to conceptualise meaning and language within an empiricist paradigm showed that one cannot sever the subject-

266

sided tie. Again only a naturalist realism can account for both cognitive and objective structures. We have to deal with language and meaning but not in the way the positivists did. A Naturalist Realism assumes the categorical role of causality and necessity in both modes of reality: causality makes experience possible and on the subject side of things it is discursivity that enables meaning to act as a causal generative mechanism.

10.1 Defining psychology as science

In the light of the scientistic and mythic image of science we have uncovered above, the main question is whether psychology is possible as a science. Some would argue that psychology is already practised as a science and that a range of methods is used. They vary from quantitative to qualitative methods or a combination of both. In principle, the debate between so-called qualitative and quantitative researchers ought to be declared superfluous because the subject matter determines the method. Thus, when one wants to determine which brain areas are involved in colour perception one will utilise quantitative methods (as well as fMRI scans and mathematical approaches to data analysis) because it really would not help to assume that a narrative of one's experience of the particular yellow of a lemon would clarify brain structures. The converse is also true.[385]

Taking a step back to confirm what currently is advocated as science in psychology, I chose Robert Sternberg's definition on the one hand, and an introductory psychology text on the other. If there is someone that should know their p's from their q's then it is Sternberg, one of the most illustrious and authoritative figures in psychology to date. Two definitions of psychology as science from textbooks are quoted, keeping in mind what was said about textbooks in paragraph 2.2.1 above:

To study psychology—the study of the mind, behavior, and the relationship between them—is to seek to understand how humans and other organisms think, learn, perceive, feel, act, interact with others, and even understand themselves … Psychology is both a natural science, involving the study of the laws of nature, and a social science, involving the study of laws of the thoughts, feelings, and behavior of humans and other organisms (Sternberg, 1998, pp. 6-7).

The second definition says: "*Psychology is the science that studies behavior and the physiological and cognitive processes that underlie it, and it is the profession that applies the accumulated knowledge of this science to practical problems*" (Weiten & Halpern, 2004, p.

---

[385] Of course, this is where the example of Mary, the neurologist, with the ability to only see in black and white, applies Jackson (1986). The point of the example is that a neurologist, like Mary, cannot know what it feels like to see blue even though she knows everything there is to know about colour perception.

18). A number of issues can be pointed out in the self-understanding of psychology from these definitions.

To summarise the main ideas of the two definitions: psychological science studies behaviour and the processes that underlie behaviour. The processes include the mental, learning, perception, feelings, acting and on a lower level, the physiological. Sternberg introduces a distinction strange to the South African psychologist's ear, namely that psychological science includes both natural and social dimensions and both search for laws! Assumedly psychology lies in the social science domain. The search for laws in both the natural and psychosocial domains is precisely the sort of claim that opens one up to an accusation of positivism. The second definition includes application or as we currently refer to it, translational issues.

The things that underlie behaviour, such as perception and feelings, can be viewed as parts of psychological functioning, which mostly lead to behaviour, but they cannot be seen as full explanatory Bhaskarian generative mechanisms. In some instances, a simple perceptual fact might be an explanation of behaviour, such as I saw he had a gun and ran away. However, perception has levels and layers of mechanisms also in need of explanation, and this quest is also part of psychological science. Sternberg assumes three terms for psychological study, viz., mind, behaviour and their relationship. In a sense the mind and behaviour reflects the transcendental argument's subject and object-sideness discussed elsewhere. However, it would be premature to equate behaviour with the ontological categories providing epistemic access to psychological reality. However, a number of opinions exist on what constitutes psychological science or psychology for that matter. If it is, for instance, behaviour does this commit one to forms of behaviourism? To what extent can one accommodate the mind? It seems as if Sternberg cast his net so wide in order to satisfy diverse opinions on what the psychological involves. The next section addresses the issue of externalism in psychology or the focus on behaviour whilst accounting for the mind in some way. I purposefully did not choose to discuss behaviourism in its classical forms but a perspective—called New Realism—that did not want to commit to behaviourism but still tried to avoid a mentalistic approach, mainly to avoid idealism in various forms.

Another issue the definition above raises relates to the swift division between natural and social science by Sternberg. Of course, it is understandable—this is how we are used to speaking about our reality, but what would Naturalist Realism mean for a view of psychological science? What would it take, for instance, to practise ontological egalitarianism and depth or vertical explanation, and what would it mean for psychology?

268

10.2 Externalism in psychological science: the New Realists

Edwin Holt was one of six New Realists that came to prominence, albeit very briefly, at the turn of the previous century (Holt et al., 1912).[386] Recently, Charles (2012b) published a collection of essays about Holt and the New Realist movement. Similarly to Anderson, Holt is relatively unknown outside the brief time he worked as an academic although he, as Anderson, influenced a number of prominent role-players in psychology. Well known is Gibson (1966), prominent proponent of ecological psychology and direct perception.

Of Holt, Charles (2012a) says

He was an early behaviorist, whose support was crucial to that movement, and yet Holt's work is rarely discussed in that context. He wrote the first English-language book on Freud, taught the first social psychology class at Harvard, wrote scathing critiques of representational models of the mind, bashed dualism and idealism, argued for embodied cognition, presaged dynamic systems work, and much more; yet his work is not prominent in discussions of any of those issues. Something more must be afoot (p. xxxii).

Holt is also "famous" by association with William James who, to some extent, acted as mentor and friend (Taylor, 2012, p. 121).

10.2.1   Introduction

New Realism (NR) is a form of realism that appeared briefly through the work of psychological theorists and some philosophers at the turn of the previous century. Recently a work on Holt, one of the primary figures in New Realism, appeared. A small group[387] gathered around communal topics but unfortunately did not last very long because of various historical factors. Holt is best known for his students, namely, Tolman and Gibson (Heft, 2012, p. 191). The work of James Gibson (1966, 1979) on ecological realism, or direct perception, is probably better known than Holt and often gets quoted in cognitive and perception literature. Recently, Gibson's work became more relevant due to a number of developments in psychology, among others, brain imaging studies on perception and new research on vision, cognition and perception. The recent interest in New Realism coincides with a stronger realist movement in psychology, of which the Australian brand of Situational Realism is an example.

---

[386] *"Although this school of psychology, like an earthquake tremor, was short-lived, it upset the field— surprising and shocking some and confusing and angering others"* (Shaw, 2012, p. 158).

[387] *"They called themselves the 'New Realists,' comprising six philosophers from four universities: Edwin B. Holt and Ralph Barton Perry (Harvard), W. P. Montague and Walter B. Pitkin (Columbia), Walter T. Marvin (Rutgers), and E. G. Spaulding (Princeton). The neo-realism doctrine they espoused was heavily influence by William James (1842–1910) and the philosophy he called 'Radical Empiricism'"* (Shaw, 2012, p. 158)

10.2.2 Main tenets

The main tenets addressed by New Realism are to some extent familiar ground for the realist. However, one should be cognisant of the differences with other versions, but one can make an argument that some issues in New Realism provides an attempt to solve some of the problems in psychological theorising.

The new realists are united[388] in terms of the following:

(a) A fundamental rejection of and opposition to idealism[389]

(b) Rejection of dualism

(c) A close apparent alliance to behaviourism

(d) Strong views on direct realism including direct perception

(e) Opposition to representationalist views of cognition

(f) Externalising of consciousness and cognition to various degrees

These issues will be briefly discussed. In Charles' (2012b) collection of various essays about mainly Holt and his relationship to the New Realists, it becomes apparent that William James had a profound influence on the New Realist movement. James called his own philosophical approach radical empiricism which might remind one of positivism and logical positivist variants (Chakravartty, 2007, p. 14; Taylor, 2012, p. 106), but it should be kept in mind that the debates in James' particular time in the history of science and psychology clearly involved the battle between physics as the queen of science and other disciplines struggling for scientific recognition. Psychology was not at all exempt from this process as positivism's influence on psychology and behaviourism as dominating paradigm in the early twentieth century attest to. Measurement in psychology was an important issue and widely regarded as the hallmark of good science, while operationalism was the order of the day (see paragraph 2.2).

However, even at that stage on various fronts, the battle with dualism raged fiercely and, in a sense, still dominates the philosophical discussions in psychology today. The relationship between mind and matter was conceptualised in various ways. James' understanding of the relationship is encapsulated in his view of radical

---

[388] *"Broadly conceived, the following is what they held in common: Many objects of knowledge are independent of them being known, all relations are external, pluralism is more likely than monism, and whatever subsists is not any less real than what exists"* (De Waal, 2012, pp. xxiii-xxiv).

[389] The same opposition can be found in Anderson (1962f, p. 60).

empiricism. [390] However, it seemed as if Holt, as one of James's followers, misunderstood radical empiricism and exorcized the mental/consciousness phenomenon wholly from its so-called material substrate (Charles, 2012a, p. xlviii; De Waal, 2012, p. xxii; Taylor, 2012, p. 106).[391] James intended a fine balance between the mental and the material. The material and concrete is important, but subjectivity forms part of the lived world.[392] Radical empiricism is what we refer to as direct realism, namely, a rejection of representationalism. Thus, when we look at an object there is not two, i.e. a representation in my mind and a real object out there, but only one.[393] Furthermore, James' empiricism was not confined to the senses but included the full range of human experience. According to Taylor (2012, p. 110), James' radical empiricism provided a broader base for experimental psychology which did not restrict psychological study to physiological investigations but also phenomenal experience.

James' radical empiricism was certainly empiricism, but as Shaw (2012, p. 162) indicates, it had such a surprising twist that it was easily misunderstood: [394] empiricism includes everything that can be experienced, even relations. James' well-known concept of the flow of consciousness expresses the idea of a continuous flow of experience. The relation between, for example, the knower and the known, forms part of this continuous experience which means that no gap[395] between the two (the so-called subject and object) can be posited (Shaw, 2012, p. 167). Thus, what

---

[390] See the concise (and beautiful) definition from James quoted in Shaw (2012, p. 162): *"I give the name of 'radical empiricism' to my Weltanschauung [worldview]. Empiricism is known as the opposite of rationalism. Rationalism tends to emphasize universals and to make wholes prior to parts in the order of logic as well as in that of being. Empiricism, on the contrary, lays the explanatory stress upon the part, the element, the individual, and treats the whole as a collection and the universal as an abstraction"* (James & James, 1920, p. 41).

[391] Taylor's (2012, p. 105) research concluded that only a few people understood James's radical empiricism and they do not include Holt.

[392] *"In his metaphysics, he redefined empiricism and designated it as radical because what he meant was that empiricism was not confined to the senses but covered the entire spectrum of human experience. Science was not required to take up what cannot be experienced, but it was duty bound to study all that was within the spectrum of human experience.*

Radical empiricism referred primarily to pure experience in the immediate moment before the differentiation of subject and object" (Taylor, 2012, p. 109).

[393] *"Radical empiricism therefore refutes the doctrine of representation upon which all modern science is based—that there are two pencils, the one out there in my hand and the one in my mind which I am modeling. James said: No, there is only one object and that exists at the intersection between the history of that object and our autobiography at that moment. This is not Berkeleyan idealism, however, where everything is an idea in the mind of God. Objects do exist independently, but they are inert until animated by consciousness"* (Taylor, 2012, p. 109).

[394] *"James democratized experience by a bold move toward a kind of monism that was as surprising as it was unfamiliar. By making relations objects of experience, he found a way to get around dualism"* (Shaw, 2012, p. 162).

[395] "Gap" refers to the mind-matter one (Shaw, 2012, pp. 163-164).

Anderson ontological egalitarianism is characterised as neutral monism, a position the New Realists embraced (Shaw, 2012, p. 167).

10.2.3   Direct realism

Without belabouring a number of points that were discussed elsewhere, a brief overview of the main tenets of New Realism is in order. The first point mentioned above is the fundamental opposition to idealism. Lockean epistemological idealism was opposed by the NR because of its inability to enable a direct experiencing of reality (Shaw, 2012, p. 160). This idealism interjects "ideas" between mind and world, and this way of formulation shows how short the path to dualism is.

Indirect realism posits an eventual distinction between mind and reality. Simply stated, if representations intervene or is required between sensing the world and perceiving the world, it leads to idealism, or as Tonneau (2012, p. 35) says, "*philosophical skepticism about the external world.*" Thus, by advocating direct realism, i.e. that no representations need be posited between mind and world, motivates the anti-idealist stance of NR (Shaw, 2012, p. 158).

However, NR opposition to idealism goes further than Lockean idealism, it also includes Hegelian idealism, not only because mind consumes reality but Hegelian logic internalises relations. The dialectic movement from two opposites to a "higher" incorporation of bipolarity means that nothing is distinct. In other words, relations between things are internal: "*This is not so with external relations, for here the object retains its identity even after joining a collective*" (Shaw, 2012, p. 177). NR maintains the identity of individual things and view relations as external to them.

Dualism divides reality into mind and matter (Shaw, 2012, p. 160). Holt seemed to be sympathetic about the constant gravitation of psychologists towards dualism as a reaction against the constant bombardment of idealism: behind ideas or representations there must be something *real* which gives rise to experience and ideas (see Holt, 1914, pp. 130-131). Consequently, dualism as a response to idealism is understandable but not excusable. Costall (2012, p. 251) notes that dualism for Holt entails representationalism, and therefore, needs to be rejected as well.

Why is representationalism such a problem for NR and other direct realists? Using representations to explain mental processes is vacuous (Shaw, 2012, p. 180). It merely shifts the referent. To explain mental processes, reference is made to representation, then memory and so on. Shaw (2012) also mentions a number of reasons for siding with direct realism, such as representations having singular meaning, while real objects in the world afford multiple perspectives. The main argument for Shaw is that real objects afford rich information. I use the term "afford" deliberately to refer to Gibson's use of affordances that will be explained below.

272

However, the main argument against representationalism is epistemological. The totality of cognitive psychology/science slipped with ease into a representationalist endeavour during its development, and of course, computationalism did not assist in resisting this trend. The few voices against representationalism struggled against a gargantuan legacy of experimental and empirical work. The epistemological roots lie in the positing of ideas mediating external reality; and these issues have been discussed earlier.

10.2.4 Situation

Mention should be made of a particular idea Heft (2012) discussed about Holt's concept of the "*recession of the stimulus*"; how it was misinterpreted, and then corrected, to bring the idea closer to current notions of "situation." When reading the essays in Charles (2012b) the clear Holtian allegiance is very apparent, but Natsoulas (2012) is clearly not impressed with Holt and the New Realists' externalisation of consciousness. Shaw (2012) shuns the dualistic epistemological implications of NR, but Heft (2012) reinterprets the behaviourism of Holt very sympathetically, but despite this, his interpretation is valuable for our purposes. I came under a strong impression while reading the New realists and Maze (1983), of how thin the line between traditional behaviourism and direct realism is. It is so easy to slip to the other side, but as I hope to show, it need not be necessary. Behaviourism is widely regarded as positivistic, restrictive, nugatory towards the mental, and so on; that is, it embodies everything that went wrong with psychological science. I suspect that this pejorative gut-reaction towards behaviourism is what blinds psychological scientists towards the so-called dead-end of current cognitive psychological science.

The recession of the stimulus in Holt's work, which is not often mentioned, plays an important role in defining his brand of behaviourism. However, Heft (2012, p. 192) is quick to point out that Holt's kind of behaviourism differs from classical behaviourism, namely, that everything mental should be externalised and be disposed of. Holt agreed that psychology should be placed on scientific footing and that the externalisation of the mental should serve this purpose; however, he could not agree with the extreme reductionism and the mechanistic tendencies of behaviourism. It is interesting to note what "mechanistic" means because it relates to the notion of the recession of the stimulus; if we mean behaviour is only and merely stimulus-response (re)actions, then Holt would disagree with classical behaviourism.

According to Heft (2012, p. 194), behaviour for Holt (1931) is "agency,"[396] namely, an organism reaching out to a stimulus and not merely reacting to one.

---

[396] The concept of agency is within direct realism is a laden one (Maze, 1983), and for the moment is the term I use to express what I think Holt means (Heft, 2012, p. 192).

Behaviour is "adient"[397] which means it is not a mere reflex; it is rather a response or an outreach or grasping of a stimulus. Furthermore, behaviour as adience or entailing adient responses means the whole organism is involved in behaviour, and the latter is not a single isolated reflex (Heft, 2012, p. 205). Not only is the organism involved, but also the stimulus [398] is part and parcel of behaviour. These relations and components form the psychological situation. The concept of "field" is applicable here as well: the field within which psychological behaviour takes place includes the organism and environment (Heft, 2012, pp. 197-198). Behaviour and intentions cannot be understood or accurately interpreted separately from context meaning behaviour has functional significance (Heft, 2012, p. 198).[399] Thus, Heft (2012, p. 200) interprets Holt's recession of the stimulus as the stimulus receding in significance because the meaning of behaviour involves the concurrency of organism-environment, both on wider or molar contexts, rather than micro or atomistic levels.[400]

The psychological situation includes the organism-environment concurrency and adience means an agent is moving towards stimuli that, in their turn, recede so that action within this context gains molar meaning. If it is true that Holt's view can be conciliated with this rich view Heft sketches of the psychological situation, then Holt's contribution is indeed very valuable for what we are trying to achieve in psychological realism.[401] Heft (2012, p. 201) summarises the gist of adience and the recession of the stimulus with an example that Holt (1915, p. 161) provides about the actions of a hen gathering her chickens when a hawk is spotted: the action of the hen is only understandable in the light of the *situation*[402] that involves a number of variables within the organism-environment context. The third-person observer gleans

---

[397] *"The tendency to seek out or maximize the impact of a stimulus"* ("Adience," 2015); also *"By adience, Holt means that behavior or action is by definition an 'out-reaching, outgoing, inquiring, and examining, and grasping' response (Holt, 1931, p. 41), not a mere reaction to impinging stimuli"* (Heft, 2012, p. 194).

[398] *"Crucially, and it bears repeating, properties of the object toward which integrated action are directed are constituents of that action"* (Heft, 2012, p. 196).

[399] To be fair towards Heft (2012, p. 198) and his very sympathetic interpretation of Holt, he does put his remarks in context: *"All the while, Holt shows his behaviorist leanings by avoiding any reference to intrapsychic processes or structures that subserve these environment–behavior functional units. Indeed, he argues that when we turn to such intrapsychic variables, it is a sure sign of having failed to identify the proper (i.e., meaningful) functional relationships at work. This is a molar, functional behaviorism"* (emphasis Heft's).

[400] Heft (2012, pp. 199-200) castigates himself for contributing in earlier publications to confusing Holt's recession to the stimulus with the proximal-distal interpretation of stimuli.

[401] See the following two quotations from Heft that creates the impression that Holt's description is rich and meaningful and moves beyond S-R mechanistic theories: *"Admittedly, this account is an improvement over an S-R formulation because we are offered a view of an active organism, rather than one goaded into action by a stimulus"* and *"True, a description vis-á-vis operant behavior under stimulus control is a description of situated action, but it is a description that is impoverished with respect to meaning"* (Heft, 2012, pp. 205-206).

[402] Emphasis mine.

meaning from the actions because they are situated[403]. With the concept "situated" or "the situation," we include the relations between a number of role-players and things, actions, and so on. What is important, then, is that the process of interaction (i.e., relations), and involvement of the organism-environment concurrency, constitute meaningful behaviour.

Maybe an example of a particular farm animal was deliberate on Holt's part to illustrate that, because of the externalised nature of behaviour, understanding the situation or situatedness of behaviour is possible from a third-person perspective.[404] It is much more effective to illustrate the externalisation of behaviour with a chicken because we do not have any access to its consciousness (in fact, it is colloquially assumed to be one of the dumbest bird species). When we try to understand another person's actions our constant first-person perspective interferes with the process so that we do not realise we only need a third-person perspective to find behaviour meaningful. Heft's (2012, p. 206) solution to the first- /third-person perspective of meaning is to view "*experiences as situated.*"[405]

10.2.5   *Ecological realism*

Gibson is part of the New Realists' lineage, especially because he was one of Holt's students. However, Shaw (2012) argues that Gibson does not really express his debt to the New Realists and Holt, because a number of NR tenets can be found in Gibson's work without proper acknowledgement. For instance, he argues that Gibson almost never polemicises against representationalism by name, although Shaw's (2012) suspicion is that Gibson might take its untenability for granted. Shaw (2012) hints that there are other examples of Gibson not acknowledging his debts to NR despite being very aware of the roots of some of his theoretical concepts.

Despite these issues, Gibson's realism is important for psychology as showed by a renewed interest in many Gibsonian ideas in the philosophy of psychological science. Gibson's Ecological Realism is summarised by Shaw (2012) very clearly:

Briefly, for Ecological Realism there is only one real world of which we are aware, and it is the same world in which we live. The fundamental idea is simple and bold: Direct

---

[403] "*The action of clucking is a function of coexisting, multiple factors—a 'situation.' It is the presence of a perceived pattern of relations, including the manner in which the perceiver figures into those relations, that accounts for the action in this example. Said another way, the action is adient with respect to an ensemble of factors present. Or perhaps even better, the action is 'situated'*" (Heft, 2012, p. 201).

[404] "*Our actions are not mere motor movements—the output of 'inner' mental/brain events—but rather they are the most visible aspects of integrated, organismic actions that are directed and situated (adient)*" (Heft, 2012, p. 215)

[405] Interestingly, Heft's (2012, pp. 203-206) retrospective view of Dewey grounds the richer interpretation of situatedness beyond that of a mechanistic S-R model. Heft (2012, p. 206) acknowledges the following: "*To set aside meaning, however, is to set aside, at the very least, the critical quality of human existence.*"

perception is awareness, invariant information its vehicle, and affordances[406] *its content* (p. 180).

Shaw (2012, p. 181) continues: *"Whatever we can know must have these three ingredients. There is no room for subsistents here."* What Shaw means is that there are no place for distinctions between, for instance, illusions, intentions and real concrete object like trees. Everything is information to the perceiver and according to Shaw (2012, p. 181) this way of conceptualising perception solves the problem of dualism in another way. Information is invariant and lies in the concurrency of perceiver and environment (Shaw, 2012, p. 185). It is detected or picked-up but not processed![407] Different experiences of the same information, i.e. so called interpretations of the same object (compare the elephant problem or Bhaskar's example of the sun setting[408]), are different situations within which we find information (Shaw, 2012, p. 184). Gibson spoke about the movement of the observer through the environment, thus, participating in the optic flow of information. The same source of information provides multiple specifications depending on movement and flow; information might be hidden, become visible, might be distorted, etc., and depends on neither the organism nor environment separately but concurrently.[409] Shaw (2012, p. 184) says that our experience is ecological and not phenomenological, i.e. experience does not lie in the processing of the organism (see footnote 407). All the information required for multiple perspectives comes from a single informational energy source (Shaw, 2012, p. 181).

10.2.6   *Causal explanation of behaviour*

Maze (1983) can be positioned in the line of realists originating with Situational Realism and the New Realists. The reason I am discussing his theory of explanation of behaviour is because it is a corrective of the New Realists' strong behaviourist overtones; it clarifies the object in *xRy*, but is still radical enough to upset the

---

[406] *"'Affordance' is the name Gibson (1979) gave to the action possibilities supported by an environment's physical properties, and it serves as the vehicle for the functionally defined meaning and value of objects, events, or situations. Affordances are properties of structured energy distributions whose sources are in the environment taken in reference to the actor–perceiver's needs, wants, expectations, and intentions"* (Gibson, 1979; Shaw, 2012, p. 182).

[407] *"If we contextualize information properly, then all that we experience is ecological, and not phenomenal or physical or neurological"* (Shaw, 2012, p. 184).

[408] *"For Kepler to see the rim of the earth drop away, while Tycho Brahe watches the sun rise, we must suppose that there is something that they both see (in different ways)"* (Bhaskar, 2008, p. 21).

[409] *"Gibson had no need to postulate a second realm of subsistents to supplement the existents. We need only recognize that the information might be transformed, distorted, or hidden. The object of misperception, therefore, can be the information, or specifying relation, of whatever degree of fidelity circumstances permit, and not some evanescent object. This removes any need to posit inexistents or subsistents for the sole purpose of having deniable objects for our misperceptions: The stick in the water that appears bent is not actually bent but straight"* (Shaw, 2012, p. 183).

representationalist applecart. In fact, Maze is frequently quoted by the Andersonian Situational Realists.

Maze's (1983, p. 37) main argument is that behaviour needs to be explained in terms of efficient causes. In order to fulfil Anderson's requirement of ontological egalitarianism one has to embrace the notion that in the psychosocial domain everything is caused by something, as in the natural. Above I have established the independence of the object, we know that relations entail actions like knowing, perceiving, and so on, but now we need to determine how the subject is responsible for behaviour. The SiR principle of non-constitutive relations means a thing cannot cause its own behaviour (see paragraph 5.4.6, page 132) (Maze, 1983, p. 5).[410] It is logically and ontologically inconsistent to say John acts out of his own free choice, i.e. he decided to act just because he wanted to (Maze, 1983, p. 7).[411] All behaviour, according to the principles of efficient cause and of distinctive things, must be caused by something else. Things cannot act spontaneously on their own, out of free will, because then the principle of non-constitutive relations is violated (see discussion in paragraph 5.4.6). We have to commit to determinism in the sense of efficient cause, which merely means behaviour is caused by something (Maze, 1983, p. 8). Psychological determinism, as I have said elsewhere (page 302), does not mean Laplacean determinism or mechanistic determinism where the starting point fixes the outcome. Hopefully, we have moved beyond this type of mechanistic determinism. Psychological determinism also does not involve the simple behaviouristic reflex arc or stimulus-response behaviour, which I will again touch upon below.

Of course, speaking of behaviour as determined means that many concepts we use professionally and in folk-contexts are vacuous in their ability to explain behaviour. Any explanation involving any cause other than efficient cause is inappropriate. Thus, a teleological explanation involving purposive behaviour or intentionality cannot serve as a true explanation and leaves some issues unresolved.

Teleological explanations can be one of two sorts: intrinsic, which refers to the goals of an organism, and external, which refers to the function of something (Maze,

---

[410] *"Not only can there be no mental entities with relations intrinsic to them, but the arguments supporting the mind-brain identity thesis, properly understood, entail that there cannot be any intrinsic, non-relational mental properties whatever, and it is a salutary exercise to try to discuss mental processes without using any of those traditional mind-type nouns"* (Maze, 1983, p. 5).

[411] *"'Why does this flower close its petals in the evening'—are answered by finding the internal structures and the external cause, but if we accept that human beings simply are able to direct their own behaviour towards whatever goals they choose, then the answer to the 'Why?' question will invariably be, after perhaps a number of clauses specifying interim goals, beliefs about ways and means, and so on, simply 'Because he chose', and that will be that. Such an answer is final, unchallengeable, and totally inscrutable. If there were such a realm of events, there could not be a science of it"* (Maze, 1983, p. 6).

1983, p. 12; Woodfield, 1998). Purposive behaviour can be described as actions directed towards a goal. Goal-directedness drives behaviour. In the case of humans intrinsic teleological explanation involves intentions or intentionality along with the related concepts of desires and beliefs. In general, both intrinsic and functional explanation have the structure of Y (outcome) explains X (entity) where Y is post-hoc. Although Woodfield (1998) points out the nuances between philosophers on teleological explanations, Maze (1983, p. 15) clearly falls in the camp rejecting it as a causal explanation in contrast to, for instance, Taylor (1964).[412]

Intention or intentionality, as a species of intrinsic teleological explanation, is also rejected by Maze (1983, p. 23). His main issue with intentionality is the impossibility of intrinsic relations or constitutive relations. At first glance, the characteristic of *aboutness* implies that an intention is aimed at something. If the object of intentions were an empirical or real thing, then we might have found a way of dealing with intentionality within realism. Questions of the nature of the object is crucial, and a number of authors made different distinctions to account for objects referring to real or imaginary stuff (such as chairs or unicorns). Maree (1995, pp. 46-52) discussed the role of intentionality as a characteristic of consciousness and pointed out that, while Brentano insisted on intentionality as the hallmark of the mental, Husserl had a different and more nuanced conception of intentionality. Intentionality for Husserl is much less than mere representation; it forms part of the transcendental conditions of knowledge and cannot be a question of the empirical subject:

> *Both aspects* [referring to *noesis* and *noemena*][413] *of the intentional experience must be distinguished from the actual empirical experience or its sensory content … The difference between the sensory content of an act and the intentionality of an act is the same as the difference between a word and its meaning* (Maree, 1995, p. 51).

In the subsequent discussion of intentionality one almost gets the impression that the object of intentionality becomes so ephemeral as to lose its representational function (Maree, 1995; Maze, 1983, pp. 24-27; Pivčević, 1970; Spiegelberg & Schuhmann, 1982). In various formulations, a perceiving subject (*a*), a relation (*R*), albeit the intentional act, and an object (*b*) are provided. Frequently, the relation slips into *aR* or performs a constitutive act on both sides (*aRb*). More importantly, whatever way the object is regarded, there is still a gap between it and external objects. So even if, as the quote above says, the object is something as vague as the "meaning" of

---

[412] *"Certainly, self-activation in the full sense of an event that has no external cause but is 'self-generated' cannot be listed as an objectively observable aspect of behaviour. We can see, say, a sprinter leap from the starting-blocks without being pushed or pulled by anything else, and we can see a rocket hurl itself from its launching pad also without being externally pushed or pulled, but we cannot claim to observe that the former event was uncaused any more than we can claim it about the latter. The causal processes may well be concealed"* (Maze, 1983, p. 12).

[413] My insertion.

things, it still fulfils a representational function, and this is where the problem lies: how do we know things in the head or things in the world?[414]

Let us clarify the distinction between intentionality and mental representations. As mentioned above, intentionality is said to characterise mentality. Both mental representations and intentionality are mental. Intentionality refers to intentions or *aboutness*. In the case of actions, intention is "*the intention to do*" and in the case of beliefs, the act of representing. Bechtel (1998) characterises a representation as (a) standing in for (b) something else but doing so in a particular (c) process (such as a particular act of perceiving or thinking). Thus, according to Maze (1983, p. 26), representations flounder on the objection above, and intention, as soon as it is given substance and intrinsic properties "*… causality lays its hold upon them and self-direction ('intentional action') is pushed out*." Intention cannot serve as explanation of "self-initiated" behaviour and a whole gamut of concepts need to be thrown out or revised (Maze, 1983, p. 36)!

Maze's (1983) solution to avoiding teleological explanations of behaviour is to focus on biological drives as efficient causes:

> *What is needed, I contended in the Introduction, is rather the conception of driving mechanisms or 'biological engines' which could conceivably be given an intrinsic description,[415] which is to say, the kind of thing that could conceivably be found as physiological entities, and whose operation would be such as to render causally understandable the form and the cyclical or periodic nature of 'goal-seeking' behavior* (p. 132).

The primary biological drives are literally engines: something pushing or causing something else to move or act (Maze, 1983, p. 136). They should not be regarded as mediating, moderating or intervening variables but as efficient causes. They are not "*disembodied forces or energies*"[416] but real biological mechanisms driving and influencing behaviour. Maze's contention is that only these basic drives (or as some would call it, instincts) are what we require for proper explanation of behaviour (Boag, 2008, p. 518). Even goal directedness, motives and so-called agency depend on these drives. Furthermore, uncovering drives does not mean negating the

---

[414] "*For representations, the status of substantive entities (or 'mental states' - this being only a verbal shift) cannot be granted to the various forms of mental image that have been proposed because then they could not do their job of explaining how we manage to know the world; the problems of knowing these substantive entities and their relations would be just the same as those of knowing external substantive entities*" (Maze, 1983)

[415] An intrinsic description would involve a physiological mechanism, similar to the fight-flight response.

[416] Such as psychological concepts, e.g., intentions and beliefs.

279

psychological or reducing psychology to biology (Maze, 1983, p. 149).[417] Mental and physical stimuli serve as inputs to drives (Maze, 1983, pp. 153, 163). It merely means locating cause properly and getting rid of pseudo-explanations:

> *The concept of drive, then, must include not only that of an internal mechanism which when activated impels the organism to action, but **also that of the innately provided specific actions which it impels, and whose performance is a necessary condition of the termination of the drive state***[418] (Maze, 1983, p. 142).

The termination of the drive state is the consummation of the drive:

> *Just to emphasise that point, the import of this version of instinctual drive theory is that **everything one does throughout one's life, however obviously acquired, sophisticated or culture- bound it is, is some modified form or instrumental elaboration of one of the innate consummatory actions**.*[419] *To put it more radically still, nothing is ever done but a consummatory action in some guise* (Maze, 1983, p. 152).

Thus, drives, as the primary drivers of behaviour, do not preclude other biological and socio-cultural influences. He is saying that despite these formative influences, drives remain the cause. Maze (1983, pp. 142-143) finds Freud's theory on instincts and drives as exemplary of what should be done in psychology. Pointing our Freud's solid background as a physiologist proposing theories about brain and neuron function, Maze (1983, pp. 143, 146) contends that the then current state of physiological knowledge hindered Freud from identifying the biological mechanisms for his psychological theory. A lack of knowledge forced him to fall back on

---

[417] I cannot summarize Maze's (1983, p. 162) realist programme for a science of psychology better than he did and it is worth quoting in full: "*This physiological program for the analysis of 'wants' and 'needs' is not to be thought of as a physiological **reductionism**, as if it heralded a psychology in which mentalistic terms were to disappear altogether, and the events intermediate between stimulation and behaviour were to be described in solely physiological terms. It is only in the case of discovering and listing the instinctual drives that psychology needs to turn to physiology to solve its distinctive problems, and that is because, as I have been arguing throughout this chapter, the drives can be identified only by discovering their sources and cannot be 'inferred' by studying their aims, i.e. just by observing behaviour, since the latter procedure leads to the unrestricted postulation of pseudo-explanatory constructs.*

The structural bases of drives can be found only in physiological entities, not in mental ones, because as I have argued in earlier chapters, there are none of the latter to be found. 'Purposes', 'intentions', and 'desires' have traditionally been postulated as the mental structures that give rise to behaviour, but they cannot be purified of their essentially relational nature, or credited with any believable intrinsic mental properties. Mentality consists not of structures but of relations (perceiving, believing, remembering, recognising implications) into which certain brain structures enter" (author's emphasis).

[418] Author's emphasis.

[419] Author's emphasis.

metaphorical[420] and psychological language. Even the so-called hydraulic metaphor of instincts and behaviour were a way of conceptualising underlying mechanism without adequate neuro-physiological concepts (Maze, 1983, p. 146). Maze's (1983) assessment of Freud was remarkably insightful given the current finding of neuro-physiological evidence for Freud's ideas (Boag, 2007, 2014; Brakel, 2004; Cusumano & Raz, 2014; Kandel, 1999; McIlwain, 2007; Petocz, 1999; Siever & Weinstein, 2009; Stoléru, 2014). Of course, not all Freudian concepts can survive critical and empirical scrutiny (Maze, 1983, pp. 143-144).

10.2.7   Is psychology a science of behaviour?

Manicas (1987) argues that a science for psychology do exist but it is *not a science of behaviour*. In fact, the psychological level is real and although there is a sense in which the biological and social (or cultural) determine the psychological, it is not reducible to either. Even though the social and biological are inextricably linked in the constitution of a person, one can, in a thought experiment, subtract all contextual, social and environmental influences from the development of a human being and ask what makes a human what it is from a pure biological perspective (Manicas, 1987). According to Manicas (1987, p. 298) "nature" leaves us with humanness when stripped from "nurture"; unfortunately, this is still an abstract concept. One requires a fuller characterisation of humanness and as such the concept is not very helpful. For now, it is much like saying when we strip an elephant of its culture all that is left is the elephant. However, one should rather ask what lies between the biological and social levels, i.e. is there something that cannot be reduced to the biological or the social?[421] One may still acknowledge that the intermediate psychological level can be conditioned by either or both the biological and social while maintaining its ontological independence. All humans perceive, think, learn and do (as do other organisms; the question is then what differentiates human from non-humans?), but perceiving is conditioned, influenced or restricted by both the biological and social. For example, the fact that I do not perceive stimuli in the infrared spectrum is dependent on my physiological capabilities, but the fact that I perceive a telephone—seeing and understanding it as an instrument of communication—is dependent on my cultural knowledge.

In summary, Manicas carves out a level for the psychological. In principle, it is rooted in the biological but is conditioned by the social. Perception, learning and

---

[420] *"The latter metaphorical concept appeared only after he had realised that he would not be able to make a success of his neurological model because neurology was not sufficiently advanced to fill in crucial gaps in it"* (Maze, 1983, p. 146).

[421] Manicas (1987, p. 298) assumes the psychological level: *"On the other hand, if 'human nature' is an entirely empty idea, then there is no science between biology and sociology."* How should one understand this statement? It can assume the existence of something such as human nature, thus a psychological level of science must be possible, or because there already is a psychological level of science, something such as human nature must exist.

emotional responses are all rooted in the biological level but cannot be reduced to it. All humans and animals learn, perceive and respond albeit to different degrees.

The realisation that we can ascribe consciousness to non-human beings, such as chimpanzees and dogs, precludes chauvinism and merely shifts the question of what is uniquely human on a psychological level. Manicas' perspective opens the door for locating the psychological level between the biological/social but also in the non-human domain. One cannot, for instance, claim that it is the social that uniquely defines the human because of empirical evidence of cultural and social organisation within other species. It could well be that the level of sophistication, degree of complexity or amount of self-reflexivity play a role in pushing an organism over the limit of non-humanness but empirical evidence suggests that what we regarded in the past as uniquely human no longer occupies that privileged position.

Thus, if we speak of a psychological level, it should be clear that even this level could be studied on a non-human level. According to Manicas, the basic human potentialities of the ability to learn, perceive, and so on are biologically situated or grounded. However, apparent biological differences between people such as brain-based gender differences, and biological-based racial differences are relative. The biological is given, the potentiality is there, but the eventual development of a person depends on a myriad of factors, environmental, physiological and social (Manicas, 1987, p. 304). Thus, the influence of nature/nurture is never dichotomous, or a fixed proportion of each. Additional factors constitute each dipole. For instance, nature represents genetic, nutritional and related physiological aspects and nurture cultural, social, psychological influences, and so on. For this reason *"When, then, our concern is the distinctly psychological—the personality, competences and disabilities, beliefs, attitudes, styles, and dispositions—isolating the pertinent causal factors which make our fantastic human diversity will be profoundly difficult"* (Manicas, 1987, p. 304).

Manicas argues for the existence of a psychological level. The psychological does not consist of behaviour; it is the psychological mechanisms that should interest the psychologist. Furthermore, because of the interwovenness of the levels that constitute a person, isolating causal mechanisms would be very difficult. This claim mirrors Bhaskar's point of the impossibility of experiments in an open social world. But difficulty does not imply impossibility although Manicas (1987, p. 304) seems to think that it is nearly impossible or at least very difficult: "... *we should not expect a Copernican Revolution in our ability to provide answers to ...*" questions why people have "*particular traits, competences, personalities ...*" and so on. He (1987, p. 302) emphasises the point nicely with an example of a father that would like to know why his two sons

differ in their ability to learn, whilst psychology, in any case, can barely give an answer to how human beings learn.[422]

10.2.8   Critical remarks

NR, and specifically Holt, came very close to behaviourist assumptions. To put it simply, behaviourism can be divided into soft and radical versions. Radical behaviourism externalises everything, thus, there are nothing mental such as representations, private cognitions, and even consciousness. All that we have is behaviour, and behaviour tells us all that goes on with human beings (Natsoulas, 2012, p. 147). Soft behaviourism does not deny the mental; it only denies that it can be sensibly and scientifically studied.

Holt's position is that consciousness does not exist within the brain or nervous system[423]—it is externalised. Natsoulas (2012, p. 127) summarises the issue of NR with consciousness succinctly: *"Within none of us does there occur, at all, any kind of consciousness. For centuries, we have found it natural to believe that one enjoys and suffers an inner life to which no one else is privy."* From this perspective Holt's position seems to overlap with radical behaviourism. Natsoulas (2012, p. 132) contrasts his own position with that of Holt and Gibson. While both externalises perception, cognition and consciousness to such an extent that a radical relocalisation of mental operations is brought about, Natsoulas concedes that some processes happen in the brain, some in the relationship between an organism and environment, and some in the environment.[424] The main problem for Natsoulas (2012, pp. 128, 144) is shifting the referent: in order to explain consciousness or relocate it, different terms and conceptual levels are used such as awareness, nervous system responses, and so on. In fact, Holt characterises conscious as a response to observation, thus, opening the

---

[422] Manicas (1987) argued against individual differences research in psychology: if psychology can scarcely give answers to basic questions such as how we learn, given the complex interplay between levels of human functioning, how can we expect to find a sensible difference between person A and B? Differences are to be expected given the complex nature of human development. The argument can be extended to differences between genders, races and so on. Although Manicas makes a good case for the complexity of development and that even a biological characteristic (such as gender brain differences) merely indicates a tendency and not a strict law, one cannot help but wonder where the line should be drawn for the constructionist. For instance, if females tend to think holistically, as opposed to males who tend to think analytically, one can easily accommodate the male who thinks holistically within the argument of the complexity of development and non-deterministic nature of biological characteristics (i.e., they are tendencies and not laws). However, a chicken still will not be able to converse with me despite me talking to it for the duration of its existence.

[423] *"But consciousness is in no sense at all within the nervous system"* Holt quoted by Natsoulas (2012, p. 127).

[424] *"Perceiving is an activity of the entire organism, and perceptual experience is a part and product of that activity and proceeds in the brain, at the core of the activity. And I feel very much the same about retrowarenesses"* (Natsoulas, 2012, p. 132).

way to unmitigated externalising of consciousness, a position Natsoulas cannot maintain:

> *The experiential dimension of perceptual activity would be proposed to exist between the living observer and whatever is observed. A complex, behind-the-scenes, explanatory part-process belonging to perceptual activity would be simplified and reduced to an observable feature of that activity* (Natsoulas, 2012, p. 136) and *There is much more to an activity of perceiving than whatever an ecological psychologist is able to observe of it at the molar level of description. The perceptual- experiential dimension is an occurrent part of the activity of perceiving and a crucial product of that activity, which has effects upon, among other things, the course that the activity itself takes* (Natsoulas, 2012, p. 137).

Whatever else perceiving, engaging wilfully with, and being aware of one's world is, Natsoulas (2012, p. 140) admits that it cannot lie wholly external to an organism, a position Holt seems to hold. In fact, according to Natsoulas' (2012, p. 140) interpretation of Holt, the latter locates consciousness outside the nervous system, although, what happens in the nervous system by way of responding to the environment affects awareness. However, such a relocation moves towards substance dualism, an unpalatable option to Holt!

It is understandable that Holt wants to counter dualism by externalising consciousness and related process. Mind and consciousness at the turn of the 20th century (and probably for a large portion of that century) were viewed as a substance as the persistence of Cartesian substance dualism attests to (Natsoulas, 2012, p. 147). The mind is a thing and consciousness as a thing are located in the head. In someway, nervous system activity might or might not give rise to consciousness but the point for dualism is that it is a separate ontological thing from the rest of bodily matter. Of course, tenacious religious conceptions of the soul, and so on, made matters worse (even James (1890) acknowledged the strong role of religion in psychological life and tried to find a place for religious subjectivity in a material world).

I need not unravel these issues except to determine whether NR provides sufficient conceptual material to deal with psychological phenomena. However, in terms of NR tenets I have discussed above, the large overlap between behaviourism and the unconditional externalising of mental phenomena needs to pointed out. Holt's, and even James', allegiance to positivism needs to be kept in mind; it nudges them even closer to an exclusive empiricism. Realism of the sort we would like to retain involves the reality of the unobservable, albeit not a blanket condoning and/or reifying of any psychological concept that gets thrown our way.

284

10.2.9 Conclusion

New Realism's polemics against the traditional problems of psychology and philosophy can be appreciated. At the time it was born, it looked too much like behaviourism, and its strong association with empiricism probably led to its early demise, concealing its strong realistic stance against dualism, idealism and representationalism. These issues are, again, very much in the focus but one should be careful not to fall into the same trap.

I do not think a wholesale rejection of representationalism is feasible. Rejecting dualism on ontological and epistemological grounds I can agree with, but denying consciousness and privacy or affirming the externalisation of consciousness and related perceptual processes is wrong. I think a weaker form of direct realism allowing some form of representing might present a more feasible answer.

10.3 Investigating psychosocial reality

Methodological and epistemological relativism found willing participants in some constructionist proponents in the human and social sciences and it was realised that people, more collectively than individually, create the truths they are willing to work and live with. For science this meant that knowledge is socially constructed and essentially subjective rather than objective. A simple example will suffice: the constructionist says that something such as "personality" does not exist and is a mere fiction or creation of human minds (Burr, 1995). It can be replaced by other categories and other "realities." Even the category of gender can be questioned and reconstructed. By contrast, the realist asserts the independence of reality from the human mind: there is something separate from the human mind that does not depend for its existence on the human mind. The situation with psychology as a purported science is not as simple as posed here. It is not merely a matter of arguing for either a realist or constructionist position of which the latter acknowledges the importance of the social dimension of human reality.

10.3.1 The role of the individual

A socially constructed view of reality makes sense within the social realm, culture, etc., but what about persons as agents?[425] The views of the relationship between the individual and the social (also called the problem of structure and agency) have a long and intense history in the social science philosophy and will not be dealt with here. Some postmodern views of psychology deconstruct the subject, the individual and the self and morph these "constructs" into the social (Kvale, 1992). However, despite deconstructing the subject, psychology cannot but focus on the individual at some stage of its investigations. I think a wholesale deconstruction of

---

[425] Harré (2002a, pp. 148, 162; 2002b, p. 118) refers to a powerful particular as the most basic active agent of types of things (see pp. 7 and 268 below). Usually it refers to the most basic units in physics.

the individual is not possible. As an example of a voice usually enlisted by constructionists (Burr, 1995), I would like to briefly mention Harré's (1998b) position on the self which gives a nuanced view of why a constructionist scientific psychology is necessary without taking leave of the reality of the agent (Lock & Strong, 2010, pp. 313-315).

10.3.2 Dissolving the subject

Rom Harré was born in New Zealand, studied mathematics and later taught physics and mathematics at the University of Auckland. He then studied under J.L. Austin at Oxford and later became the University Lecturer in the Philosophy of Science at Oxford (Lock & Strong, 2010, p. 309). One of his students was Roy Bhaskar. Harré is well-known for his analysis of the grammatical self: the fact that we use nouns to refer to ourselves does not imply an entity or a substance such as "person" or "self" (Lock & Strong, 2010, p. 310). The usage is merely convenient; it is a grammatical fiction[426] or a linguistic tool.

For Harré (1998b, p. 4) there are only two sensible accounts about people, namely, a moralistic and a molecular one. The first deals with people as they speak about themselves and others and the second one is about persons as bodies. Because talk about persons or selves are "useful fictions," psychologists, according to Harré (1998b), *"... tell both kinds of stories, but it is evident that their grasp on genres is not always secure ..."* (p. 10) He criticises a number of psychologies, *inter alia,* trait theories of personality. His basic claim is that psychology can only be meaningfully practised as *discursive* psychology. There can be no such thing as a realist psychology utilising realist strategies usually found in natural science. As soon as the researcher moves to the realist realm, he/she crosses over to neurology and physiology. The assumption is that people are, as are sub-atomic particles, powerful particulars creating their minds, cognitions and so-called personalities in the moment of the act. Beyond what he/she sees and experience there are no unobservables to study for the psychologist.

In the following rather lengthy quote from Harré (1998b), a constructionist view of what the mental consists of, is elucidated:

> *The picture of the human form of life which I shall be sketching, in these studies is framed in a certain account of mind. What sorts of attributes are those we single out as 'mental'? It seems to me that people produce streams of actions, some private, some public. These display all sorts of properties some of which we pick out as mental. There are stabilities and repetitions that recur in these streams of action, like vortices in a swiftly running stream. The body-centred structure of perception is one such recurring stability found in all acts of perceiving. There are patterns of stability and change in the*

---

[426] *"Selves are grammatical fictions, necessary characteristics of person-orientated discourses"* (Harré, 1998b, p. 4)

streams of cognitive and emotive acts that each person produces, usually with the engagement of other people. Some are private and others are public. The private ones tend to be taken as the mental attributes of the person. Amongst the attributes of a person there are not only those currently produced in the flow of action but psychology must also take account of the skills and dispositions needed to produce the stream of activities we call 'the mental life'. Mental states, according to this point of view, are produced ad hoc in the course of people acting, and are nothing but attributes of the stream of action. There are no mental entities other than the public and private actions people engage in. But what of the self? Is it an entity that must be invoked to explain the singularity and unity of each human being as a person? (p. 3).

A number of aspects about persons must be noted. First, the main characteristic of people is that they produce actions or rather "streams of actions." Both observable behaviour or public actions, and private or mental actions, are acts effectuated by a person as a powerful particular. The existence of persons consists in the act or in producing acts.[427] Harré is polemicizing against the traditional view that there are structures in the mind that are responsible for these actions; people are responsible for these actions and some, we as observers, can observe; others are private. The private actions are usually characterised as mental, but by characterising it as such by no means implies substantiality.

The second characteristic can be drawn from his likening of actions to a stream. Acts are fleeting, created in action and when they are played out they are no more.[428] Mental states, says Harré, are *"attributes of the stream of action"*: if the acts stop, they stop existing. How should we understand mental states as "attributes

The third characteristic is that even though acts are transient, they produce patterns of stability. Again the comparison of these patterns of stability to the vortices in a stream is illuminating. It is these patterns of stability that causal psychologists look for and due to these patterns, they assume that laws, similar to those of nature, are to be found in the social and psychological domains.

To summarise: the mental is transient, insubstantial, has structure and created by powerful particulars.

---

[427] That he does not speak of "behaviour" probably points to his steering away from a behaviourist or positivist view of the mental which state that the mental is concretised in behaviour and the mental cannot be studied.

[428] Whether this is what Harré wants to say, ought to be examined further. Do mental events or acts cease to exist when they are done or played out? For example, I only have an attitude towards crime whilst feeling, thinking or behaving in a certain way. When done, there is no longer this thing called an attitude towards crime?

10.3.3　Three selves

Harré, in his discussion of personhood, makes the following distinctions between ways of speaking about selves:

10.3.3.1　Self 1

Self 1: The self we feel our selves to be is not an entity or substance but a site or a singularity from which one experiences and *"...perceives the world and a place from which to act"* (Harré, 1998b, p. 3). Harré argues that although we use pronouns and so on to refer to persons and ourselves, person is a convenient and necessary grammatical fiction to refer to the *point of view* from which we act and perceive ourselves and the world (cf. Harré, 1998b, pp. 4, 53). In the sense of self 1, Harré refers to it as a singularity, i.e. as a singular point from which the world and the self is perceived. It encapsulates embodiment because persons do have only one body from which to act and perceive but self 1 acts as the epicentre from which a person acts and perceives in space and time (Harré, 1998b, p. 8).

There are three aspects of the self 1: point of view, point of action, and line of life. A person has ability to report on these points, and does it discursively. This ability gives us an entry into the subjectivity of another person.[429]

The pronoun "I" acts as an index to indicate the point of view of a person. As point of view it expresses uniqueness, subjectivity, the non-spatial point of origin similar to the centre of a planet's orbit. However, self 1 also acts as a geographical or spatial "centring" (Harré, 1998b, p. 55). It is bound to the fact of a person having a body or embodiment.

The combination of these two senses of self 1 forms its indexical nature (Harré, 1998b, p. 57). Thus, talking about the self 1 as an indexical refers to (a) its spatial location, (b) its relative position within a moral order, (c) its relative position with a social order, and (d) its temporal position. Spatial location is intertwined with embodiment, and the person (as expressed by the English language) can indicate his/her relative position spatially. For example, by saying "I saw a strange dog in my garden" my embodied spatial position is indicated, i.e. "I was in such a position, whether in the garden or looking through my room's window so that I could see the dog." Interestingly, the last utterance also indicates temporal positioning, namely, the event took place yesterday when I was present. Temporality is not indexed by the personal pronoun "I" in English but Harré (1998b, pp. 58-59) refers to other languages where this does take place. The pronoun "I" also indexes one's moral standing for instance by indicating one's responsibility to execute a task expressed in a sentence, for example, when saying "I promise to feed the dog". Similarly it indexes

---

[429] *"With each singularity goes an ability and it is through the exploitation of that ability that a discursive psychologist can find an entry into the subjectivity of another human being"* (Harré, 1998b, p. 14).

social standing, although, again, English does not express this very well (Harré, 1998b, p. 58). An Afrikaans example will suffice. By distinguishing between "jy" and "u" when talking to persons something of one's regard for the other person is expressed. The former can be used in a demeaning manner by showing lack of respect when speaking to a person of status where "u" would have been more appropriate. In English, both these senses are expressed by "you."

10.3.3.2   Self 2

Self 2: This sense of self refers to one's belief that one has a number of attributes and to the set of attributes one actually has[430]. It includes the reasonably stable physical structure, the *"... highly labile pattern of thoughts and actions..."* and *"... individual repertoires of powers, abilities, skills, liabilities and so on"* (Harré, 1998, p. 8).

Our attributes are unique and differ from those that others have (Harré, 1998b, pp. 91-92). The belief we have about what our attributes are is one of those attributes. Harré expands the concept of attributes by include those that a person has had, those that she has (restricted and current sense of self 2), and those that she will develop in future. Thus, the attributes can be characterised by stability and change or as Harré (1998b, p. 92) says: *"permanence and evanescence."* Emphasis is placed on the fleeting and impermanent nature of attributes and beliefs probably to prevent them from being substantialised.

When a person expresses a belief she indexes two things, namely, her bodily position or spatial-temporality, and her responsibility for that belief.

What attributes[431] are we referring to? Harré indicated that the self 2 is a set of skilled behaviours. Harré (1998b, p. 135) refers to three aspects that make up the self 2: (a) relatively stable and enduring powers, skills, abilities and liabilities; (b) fleeting thought and actions that are private and public, and (c) beliefs about oneself (the self image). The skills and so on are grounded physiologically, not psychologically (Harré, 1998b, p. 15). (See the discussion in paragraph 10.2.6 below).

A person consists of powers, capacities, abilities and dispositions (Harré, 1998b, p. 15). Because persons are powerful particulars there is no need to ground the abilities further and to postulate deeper or additional structures: *"The person has no psychological attributes other than his or her powers to produce psychological phenomena in the flow of private and public actions, both symbolic and practical"* (Harré, 1998b, pp. 14-15). According to Harré psychological phenomena such as remembering, judging, and problem solving create memories, attitudes and beliefs, but it seems that these

---

[430] *"It is the collected attributes of a person"* (Harré, 1998b, p. 4).

[431] Harré (1998b) lists the following characteristics: powers (pp. 8, 15), skills (p. 8), liabilities (pp. 8, 16), abilities (pp. 8, 15), capacities (p. 14), vulnerabilities (p. 16), and disposition (p. 15).

phenomena are transient. There exists no underlying phenomenon or entity—for example something called an attitude—that explains thoughts and actions. Persons do have powers, liabilities, abilities, and so forth that create these phenomena but there is no need to ground a power, capacity or skill in some mental or in a cognitive mechanism. Harré does in fact ground capacities, etc. in something but it is not mental/psychological, it is physical. As soon as one starts to ask about the underlying mechanisms of certain skills and capacities then one crosses over to the physiological. There is no mental/psychological stratum to examine[432] and Harré's (1998b) scathing remarks toward certain psychologies can be quoted at length to summarise:

> *There are no mental states other than the private thoughts and feelings people are aware of from time to time. There are no mental mechanisms by which a person's powers and skills are implemented except the occasional private rehearsals for action in which we sometimes engage. The whole top heavy apparatus of psychodynamics and cognitive psychology is at worst a fantasy and at best a metaphor. People produce a flow of action, some public and some private, some symbolic and some practical. In one sense people are for ever producing and reproducing their own minds and the societies in which they live. The urge to base psychology on something that is occurrent, observable in its fullness here and now, and that is also persistent, constant in its nature through space and time, has to be resisted. The demands are incompatible. What is occurrent is ephemeral, What is pantemporal and more or less invariant over multitudinous situations of everyday life can be nothing but powers and dispositions* (p. 15).

10.3.3.3 Self 3

Self 3: This refers to the interpersonal perception of characteristics of persons. The impression one has of the totality of attributes of another person is what constitutes the self 3 (Harré, 1998, p. 5). The self 3 is the persona one turns to others and constitutes the perception or image others have of us and what we would like others to believe how we are. The characterisation of a person's personality falls under the self 3. How we view others in terms of traits or personality factors and characteristics or similar classification scheme falls under this rubric because this is the perception we have of someone else in interaction with that person. Typical characterisations of someone as outgoing, introverted or anxious depends on our perceptions of the other person's attributes. The self 2 consist of attributes and attributes we believe we have but exhibiting these characteristics to others by means of their perceptive skills to sum up or classify a person or by means of a personality or other psychological test is the self 3. Harré has much to say about personality test and psychometric measurement, which we will deal with below.

---

[432] *"In psychology people are powerful particulars. There are no deeper levels to look for, and so there is no place for a realist application of the hypothetico-deductive method. To use it shifts us from psychology to physiology"* (Harré, 1998, pp. 117-118).

10.3.4   *Discursive psychology*

Harré (1998b, p. 45) argues for a psychology that takes two characteristics of human behaviour into account, namely, normativity and intentionality. The first implies that behaviour can be labelled as correct or appropriate according to some local standard that was supposedly socially constructed. The second characteristic describes behaviour as goal-directed, i.e. always aimed at something. The behaviour of non-human phenomena cannot be characterised as normative and intentional. It is these two characteristics that underlie meaningful behaviour or actions within socially framed contexts (cf., the discussion above: Maze rejects teleological explanations) (paragraph 10.2.6 above). Behaviour is deemed appropriate, correct or meaningful within a context of locally constructed norms and rules (Harré, 1998b, p. 34). It is a short step from accepting the two defining characteristics of human behaviour to showing that the only way of making sense of our own and other people's behaviour is discursively. Understanding, analysing and explaining behaviour as normative and meaningful takes place verbally or in discourse. Harré also explains that the ideal model for method in psychology is the conversation (referring to Wittgenstein's explication of the conversation). The linguistic nature of conversation, its interaction, its interplay between participants and its ability to create meaning in the act of speaking presents the ideal way to illustrate the discursive nature of psychological phenomena (Linge, 1977). For instance, cognitive processes such as remembering or decision-making can be explicated by means of language or in discourse.

The possibility for discursive psychology is grounded by the singularity of the person. Three aspects of a person are important, namely, point of view, point of action and a person's time line. These form part of the singularity that is self 1. Point of view has been mentioned a number of times but to reiterate: it is the singular point in space-time from which a person perceives his/her world. In addition, it is the origin not only of perception but also of action. The active agent originates from a singular point of action—from where I am I act and cause events and so on. Given the point of view and point of action, a timeline or story line develops for each person and it is probably within this timeline that a continuity or unity of personhood is experienced. The important point though is that the points of origin, whether view, action or timeline, as experiences can be verbalised and told or narrated. Thus, the self 1 reports on her stories, development, experiences and so on. The reporting is usually done discursively; hence, access to the self 1 is through narrative.

10.3.4.1   Ontology of discursive psychology

Is a science of psychology possible albeit discursive? According to Harré it is: he even likens psychology and physics to each other because both have to do with powerful particulars. Physics deals with powerful particulars at the level of atoms, or electrons or other more basic entities. For particular explanations, atoms as powerful

291

particulars suffice while at quantum physical levels others are required. For the sake of a particular explanation an atom may function as a powerful particular, i.e. acting as a power. In the case of psychology persons are the powerful particulars beyond which no further explanation is required (except a neurophysiological one).[433] Person as a powerful particular have no parts to which one can move for explaining higher levels. Harré (1998b, p. 16) denies deeper psychological levels. Persons have no complex parts or additional parts that can be discovered or analysed (cf. Harré, 1998b, p. 47).

According to Harré (1998b, p. 46) discursive psychology is based on two ontologies, one based on the material world where physics and biology are located, and the other based on the reality of interacting persons. This all too uncomfortably sounds like dualism, and one based on Cartesian dualism of two separate substances, namely, *res extensa* and an immaterial substance. Of course, Harré rejects the substantiality of the mind which is the "mistake" Descartes made, but still reserves a separate domain for the immaterial: the analysis offered by Harré (1998b, p. 49) does indeed support a dualism, but not a Cartesian dualism of substances. Harré defines an ontology as one where one can have powerful particulars—in the material world it is atoms and the like, but in the social and psychological world it is persons (note that the social is downplayed here but one could similarly argue that communities or social groupings are powerful particulars because certain phenomena cannot be reduced to smaller parts, namely persons). The material world is then the one where causality reigns whilst the domain of the immaterial is the world of meaning. Harré puts it well: our reality can be viewed relationally but on two levels; on the first level one thing stands in relation to another in the sense of being caused by something else, but on the second level it stands in for something else: "… *the relation it bears to what it stands for is semantic and conventional, not causal*" (Harré, 1998b, p. 49).

Harré views "ontology" in a particular way, not as a pre-given description of a particular reality, but as a grammar. Given his view on personhood and expressive language this probably means that ontology as grammar means that is a *particular expression of what persons believe reality consists of*. Thus, the domain under study can be said to be an ontology which is already included in the grammar or the way one speaks about it[434]:

---

[433] This sounds like a contradiction: powerful particulars are atomistic and need not be explained further or in depth.

[434] "*By an 'ontology' I mean the presumptions one makes about the kinds of things that make up the region of the world one is studying or thinking about. It is more often than not implicit in the grammar that one uses to describe that region of the world*" (Harré, 1998b, p. 22).

292

Ontologies are, in effect, grammars.[435] *They are specifications, some explicit, some implicit, of ways of identifying and marking the boundaries of particulars for some purpose or the other. Sciences are created by choosing an ontology – or, what is more likely, finding oneself already committed to one in the way one has been thinking and acting—through the use of which phenomena are to be identified and ordered and explanations are to be constructed* (Harré, 1998b, p. 47).

Harré follows this up with the statement that ontologies are prior to the phenomena one wants to study, and because it is prior one has a choice, as with psychology, to base it on molecules or persons. I am not sure what choice he refers to in the case of other sciences and how does the priority of ontology to phenomena ground an ability to choose? I think he means that multiple ontologies exist and they exist on each level of description, thus, working on the molecular level excludes the possibilities higher (or lower) hierarchies of ontologies present. The different levels of descriptions precede phenomena: I can decide to work with the table on the macro- or the quantum-physical level. In the case of psychology we have a double ontology and you can choose either. Choosing persons as powerful particulars commits one to discursive psychology whilst the commitment to molecules commits one to physics. Bhaskar also advocates a three-tiered view of reality: reality consists of the empirical, actual and real (see paragraph 7.3.5.1). Making the picture slightly more complex is Bhaskar's distinction between two ontologies: the transitive and intransitive (see paragraph 7.3.3.1). So there might be ontologies vertically and horizontally distributed. However, Anderson's Situational Realism postulates one ontology (see paragraph 5.4.2), leaving no room for mind-matter dualism. Both Bhaskar's and Harré's distinctions leaves the latter possibility open. It seems to me that Harré's view confuses levels of descriptions and ontology: should there not be one way of being or must we allow for natural, mind and social entities?

Harré (1998b), in the case of the double-barrelled psychology, states that a choice for an ontology is made pragmatically which means that an ontology should be chosen depending on how much we would like to understand: *"how many of the phenomena does it enable us to comprehend in a fruitful and constructive way"* (p. 47)? Given that Harré regards ontology as a grammar based on pragmatic criteria, it sounds as if he is talking about theory rather than ontology. An ontology is prior to theoretical

---

[435] With "grammar" Harré (1998b, pp. ix, 9) means a common conceptual framework or language for talking about persons. I guess it is much like folk psychology in the sense of common ways we talk about psychological functioning (Harré, 1998b, p. 48). Harré extracts the usual way we talk about persons and selves. This sounds like "discourse" but Harré has actual grammar in mind: when using "I" grammatically, the way we use the pronoun, (mis)leads us about how and what we are, e.g. a singular agent. He, thus, unpacked the pronoun "I" by means of the three selves. Referring to Wittgenstein, Harré (1998b, p. 22) says: *"In particular there is the idea of a hierarchy of forms of life, each framed by a grammar or loosely organized set of rules and customs, according to which the correct- ness and propriety of what we think, do and say can be assessed."*

293

explanation and comprehension and theory is more like grammar than an ontology is. Of course, our understanding of what ontology entails is discursive, given the fact that we express ourselves linguistically, and our claims and discursive expressions are open to debate.

If we choose the person-as-a-powerful-particular ontology, to what does this choice commit us? According to Harré, an ontology that fits a discursive psychology would be the most appropriate. Brains and those issues that form the basis of a different ontology now become incorporated into discursive psychology as enabling conditions and in particular as tools to enable persons to create psychological, social and cultural goods. One can use golf as an example. The club and ball is a tool in executing the game of golf, as are the technique I use to swing the club, my level of fitness and so on. Does the club explain the game of golf? No, it is part of playing the game. To comprehend the game, the rules, goals and actions must be explained, and of course, the tools are a crucial part of the game, but they are not the game! The tools, such as the golf course, the ball, club and the player are the enabling conditions (Harré, 1998b, p. 45): without one of these the game cannot be played; without the brain and the body, the person cannot be actualised. I say "actualised" in order to emphasise that person is not a tacked-on substance or thing but created in the act of "playing" as the game is created in playing. Thus, we have enabling conditions and the powerful particular responsible for the behaviour and acts of the person.

10.3.4.2 Grounding discursive psychology in language

The most obvious motivation for a discursive psychology is the fact that we use language. Language is inextricability bound to what it means to be a person. Harré (1998b, pp. 26-28, 29) refers to Vygotsky and Wittgenstein[436] to make two important points about the role of language. Firstly, Vygotsky showed that cognitive (or mental) ability and language originate differently Harré (1998b, p. 27). Mental ability originates in neurophysiology, while language has a social origin. The structure of the human mind forms in interaction with others, thus, both language and mental skills develop when interacting with people. For the infant, a skilled adult or proxy is required. Harré (1998b), referring to Vygotsky, puts it quite nicely:

> *An unskilled infant attempts or seems to attempt some intentional act and an adult supplements its efforts. In the course of this supplementation the adult or some more skilful child interprets the infant's actions as incipient cognitive or practical or expressive acts* (p. 27).

---

[436] "*Taken together the insights of Vygotsky and Wittgenstein, with the supporting work of Metzoff and human ethologists, provide us with a foundation upon which a psychology as a study of human beings engaged in tasks, using cultural tools bound in their uses by local rules and conventions to accomplish them, has a natural and essential place*" (Harré, 1998b, p. 29).

The adult supplements an infant's attempt at an intentional act by completing the act. Although the baby has the capacity for intentionality (e.g. grabbing, reaching for, etc.), it learns intentional expressive acts by having an adult as facilitator. The next step in the child's development is replacing the intentional acts with expressions of intention by means of language. Thus, the interplay between pre-existing cognitive capacities, language and the interaction with a skilled person, require imitation and expression. [437] With these means a sense of self is developed, expressed by the grammatical pronoun "I."

Thus expressions of intentionality are replaced by grammar: a sense of self develops—"*I want something*" or "*mommy, give me a bottle.*" [438] It is a requirement, though, that language and thought not be the same thing or that they do not have the same origin: thought is prelinguistic, but a sense of self is developed as soon as language is learned because, and this is what Harré wants to say, a sense of self is formed grammatically. Language, to some extent, shapes thought and provides additional structure and skills otherwise not required without language. Personhood develops with language (Harré, 1998b, p. 29).

Vygotsky's contribution to Harré's theory lies in the idea that language shapes and structures a person's thought and private experience (Harré, 1998b, p. 42). From Wittgenstein Harré got the insight that language expresses this structure (Harré, 1998b, p. 42). In other words, the child has, firstly, private thoughts and experiences, and by learning a language, or developing a grammar, his experiences are structured in a particular way, for instance, by learning a sense of personhood or self 1. Secondly, her private experience does not remain subjective and private because through language she can *express* her feelings.

This last move is based on Wittgenstein's language game theory and in particular what Harré calls the private language argument. It shows how the child learns words for private feelings. The problem of learning words for things is usually solved by an ostensive mode of learning, namely, to point at the thing and say dog. However, as Harré (1998b, p. 39) says, emotions and itches are not things; they are private and not thing-like at all. How does a child learn the meaning of "anger", itch, and so on? It is not possible to point and it is not possible to convey a description to

---

[437] How do children learn words for inner feelings and sensations? Wittgenstein (2005, p. 75 paragraph 244) answers: *"Here is one possibility: words are connected with the primitive, the natural, expressions of the sensation and used in their place. A child has hurt himself and he cries; and then adults talk to him and teach him exclamations and, later, sentences"* (Harré, 1998b, p. 41).

[438] *"From the point of view of the discursive psychologist the step from reaching to asking, in which pronouns begin to displace gestures, is when the sense of Self 1, having a location as a person at a point in space and time, expressible with the newly acquired pronouns, begins to crystallize out of the growing repertoire of manipulative and verbal skills, During the same period of transition the sense of having one's own attributes also begins to appear"* (Harré, 1998b, p. 28)

someone and asking what it means (at least for a child). Wittgenstein's answer lies in the private language argument, which involves a distinction between descriptive and expressive uses of language. Descriptive language is used to describe phenomena and obviously the child does not have the means to do this when learning words for various emotions. Expressive language, though, is a process whereby language is substituted for the expression of private experiences, thought, and feelings. For instance, an expression of pain, which can be a grunt or grimace, can eventually be replaced by a word for the expression, namely, pain (see footnote 437 above). Thus, learning the grammar of "I am happy" expresses the actual feelings of being happy. How does the child learn that her expression for pain or happiness can be called pain/happiness? By listening to and imitating those (viz., parents) that mastered the language game. The word pain does not describe the state, it expresses it: we have made the mistake, according to Harré (1998b, p. 40), to assume that feelings are things (like tomatoes or less concrete, verbal ability[439]) which can be pointed at and subsequently be described and named. Feelings are not things to which the normal identification of identity applies. A tomato on the table can be pointed at and named for the child. Later, when passing by the same can take place, the same tomato can be pointed at. Thus, the tomato is the same, numerically and qualitatively. However, feelings cannot be identical in a similar way because they are not things.

Feelings cannot be ostensively pointed at in the same way as tomatoes can be pointed at. Feelings are private and for the child this is a problem in terms of expressing what she is feeling. It is not out there to be pointed at, but it can be expressed and by learning to substitute feeling words for feelings with the help of an adult she learns to name them. However, the distinction between expressing and describing should be kept in mind—with private feelings it is a question of expressing, and in this way, making it public.[440]

A crucial step for Harré is to argue for the necessity of the expressive use of language when talking about private thoughts and feelings. He argues that an ontological distinction can normally be made between thought and language.

---

[439] Assuming "verbal ability" is a thing, albeit unobservable and clearly psychological, that can be measured (see paragraph 2.2.3.3). I want to make the point that some psychological entities or phenomena exist, others, according to Harré's argument, are reified or substansialised.

[440] A crucial aspect for regarding Wittgenstein's argument as valid is the feasibility of the psychological explanation he gave. He provides a possible mechanism for the "bootstrapping" learning event. Of course, this argument would fail if empirical evidence points to something else. (I wonder where epistemological arguments end and where psychological arguments start? Even the early empiricists and rationalists, and Kant, postulate mechanisms for thought and base philosophical inferences on the way they think the mind works. I suppose this is true even for philosophy of mind and speculations about consciousness. Not until we have final empirical evidence we will always have epistemology: it provides us with a handle on reality and its mechanisms.)

However, in the case of expressive language there is none. The expression is the feeling, and of course, the same holds for grammar of personhood. There is no ontological distinction between the use of pronouns and personhood. Not only a ontological unity, but there is no epistemological distinction as well (Harré, 1998b, pp. 43-44). The upshot of this is that I-grammar is used expressively and not referentially.

10.3.5 Causal psychology

How does a discursive psychology differ from a causal one, i.e. one that poses unobservables accounting for behaviour? The natural science model, and specifically the critical realist one, poses mechanisms and powers that explain or account for surface behaviour. The link between the underlying mechanisms and surface behaviour is a causal one. However, Harré regulates the question of causality to the physiological realm and maintains that patterns of behaviour that seem to follow rules must be interpreted discursively within a local context or frame[441]. Only within a local context can questions of meaning, intentionality and normativity arise. The discursive psychologist steers clear from universal, general and timeless patterns or laws of behaviour since patterns of behaviour are always ideographic and locally bound (Harré, 1998b, pp. 38-39).

Crucial to understanding the dual structure[442] Harré proposes is the distinction between a disposition and a power based on its naturalistic understanding. A disposition is a description of certain characteristics of a person (or object) combining two observables as in the following: *"Under certain circumstances the following behaviour will be exhibited from A…"* (Harré, 1998b, p. 79). There is no unobservable power to call upon to causally explain the behaviour in the case of persons. A simple example will suffice: dropping a glass will probably break it. The circumstances and subsequent behaviour of the glass are sufficient to describe its brittle disposition although we know that other unobservable mechanisms and powers are involved causing the glass to break: the glass is not a powerful particular and the explanation

---

[441] *"In each science we ground our explanations in powerful particulars, active beings, and their dispositions. In physics the powerful particulars are charges and their dispositions are distributed in space and time as fields. In psychology the powerful particulars are people and their dispositions are their skills and capacities. But whereas the domain of physics and chemistry has turned out to be hierarchical, with layers of unobserved and even unobservable potent entities, one behind the other, so to speak, there is no such hierarchy in the domain of psychology. Our skills and capacities are not grounded in unobservable psychological levels, but in neurophysiology of our bodies. It is as if at the surface we are already at the depths"* (Harré, 1998b, p. 14).

[442] *"In the human world people, as psychological beings, do not have parts, though they produce complex patterns of action that give the illusion of psychological parts"* (Harré, 1998b, p. 119). This is not what he (1983, p. 76) said in a previous publication: *"In the primary structure people appear as locations for speech acts. As such they are metaphysically simple without internal structure, just as the point locations of physical space are. Real human beings, however, are not mere locations: they are 'internally complex'. This internal complexity I call the secondary structure."*

cannot stop there until one has reached the nature of molecular bonds and so on. A power (or liability[443]), in contrast to a disposition, is unobservable and it causes dispositions (Harré, 1998, p. 117).

One can compare discursive psychology to physics in terms of powerful particulars. A powerful particular is that particular "entity" that is active and responsible for causal effects. In physics they are *"charges and their dispositions"* (Harré, 1998b, p. 14); in psychology they are persons. There are no hidden layers or mechanisms to uncover in psychology as is the case in physics, biology and chemistry where hierarchical organisation of layers of reality allows the scientist to uncover hidden mechanism and powerful particulars.

The main issue for Harré lies with the locus of agentive action. Structures such as social institutions cannot be agents or powerful particulars meaning that socio-critical reform cannot proceed from institutions in contrast to Bhaskar's belief that social structures take on a life of their own. Harré's argument is important in indicating where classical CR falls short.

According to Harré (2002b), there are two kinds of causal particulars that can effect change in other things, namely, events and powerful particulars.[444] An example of an event causing something else is lighting a match and throwing it in a flammable substance. However, underlying event causality are causal or generative mechanisms similar to classical CR's view. The second type of causal agent is a powerful particular. While natural reality accommodates event causality, powerful particular causality can be found in psycho-socio reality; people are powerful particulars.

In contrast to Bhaskar's view of reasons functioning as causes, Harré (2002b) views reasons as the same sort of thing as rules and regulations. He acknowledges that rules, in a sense, underlie social activity and psychological behaviour, but they cannot be causally efficacious[445]. It is people or individuals that make decisions and who act—rules do not act, cause people to act or move individuals or groups into

---

[443] *Power* refers to intrinsic activity whilst *liability* refers to external powers acting upon an object.

[444] *"In the analysis of causality above we saw that the concept of 'cause' gathers up both events and things. The causal efficacy of events is tied to the causal mechanisms they activate.*

Quite plainly the causal ontology of events will not apply in the social case just because a social structure, though composed of events, is not an event. The alternative is to be causally efficacious as an agent, a powerful particular, some- thing like the earth as a source of gravity or the north magnetic pole on this particular magnet. Both are the right sort of particular, continually efficacious unless the activity is blocked" (Harré, 2002b p.117).

[445] *"The rules by which they manage it must not be reified into a transcendent realm from which they exert their benign influence. What reality do they have? Again we must distinguish a mode of being as immanent in practices, many of which are discursive, and a mode of being as concrete instructions, which are real as instances of discourse. In short, the only reality norms and rules have is of the same ontological status as the activities they 'govern', namely discursive acts"* (Harré, 2002b p.116).

action. Only people can act, of course, according to rules, but it is not the rule that acts as a mechanism!

Harré (2002b) explicates the ontological nature of psycho-social reality in an interesting manner. In contrast to nature where mechanisms are usually the unobservable causes of events, the structure is inverted with people. People are powerful particulars, thus, the generative mechanisms. They are clearly observable and they cause or lay down the rules and structures that are unobservable.

How do we, then, establish the fact that people are powerful particulars and act as their own causes and do not depend on rules for actions? However, it must be stated very clearly that rules are a necessary corollary of action and practice: referring to Wittgenstein, human interaction is like a game and a game depends on rules for its meaningful execution.

Harré's (2002b) view of a social structure entails its causal inefficacy. People are powerful particulars and they create structures. As such, structures are non-agentic. However, people act, they follow rules and so if one wants to change society, one should change the rules. Harré also acknowledges the fact that it is not so easy to change the rules. In society and culture there are many unspoken (and verbalised) rules that are kept in place by people. These practises he calls reductons. A reducton is a small, almost insignificant, action that is held in place by habit and tradition. They escape the boundaries of larger more significant rules, and in a sense, keeps the fabric of society together by their maintenance. An example that Harré gives is the seemingly private, but yet public, practise of teaching your son to walk on the outside of the pavement and girls on the inside. Similar "habits" of White South African males to step back for women at doors can also be regarded as reductons. This tradition does not exist amongst Black South Africans where it is customary for the male to enter first - again with similar intent than other gendered reductons: the protection and respect for the "weaker" sex.

Harré's argument depends on inverting the role of rules espoused by Critical Realists such as Bhaskar. Rules (or reasons) are not the powerful particulars prompting people to act. People can refuse to follow rules, obey them or fabricate them (Harré, 2002b p.118). Thus, people are primary in the causal chain of agentic events but rules as the unobservable stratum underlying people's actions are necessary to maintain social structures: "*People are the effective agents who are creating the social world, creating social structures in accordance with the rules and conventions that have come to them historically, and, for the most part, are immanent in social practices*" (Harré, 2002b p.119).

With people the situation is different: in a particular situation John might get angry. The disposition to get angry is sufficiently covered by the observable local

situation and there is no need to call upon unobservable mechanisms and powers to explain John's behaviour. John is the powerful particular displaying his disposition to become angry in a certain situation. However, Harré criticises personality, and particular trait psychologists[446] severely for using trait or dispositions as causal entities explaining other dispositions. In our last example, John's angry behaviour will then be explained by a high score on an aggression trait. Two points need to be made here. The first is that dispositions cannot be explained by lower level unobservables and secondly, dispositions are not substantive entities. Harré has a problem when they are evoked as constructs to explain higher order traits: because dispositions or traits are *discursive* categories there *is no plausibility attached to the belief that these are substantive constructs explaining something on a psychological level*! We have physiology and we have discourse and this is what the psychologist needs to work with. Discursive psychology cannot therefore rely on natural science methods. For example, Harré clearly finds the idea of measuring psychological phenomena distasteful: "*... calling questionnaires 'instruments' and the results of answering them 'measures' to which statistical analysis is applied does not make the practice a science*" (Harré, 1998, p. 51).

The last remark combines the problem of psychology as a science with that of the reality of constructs in psychology. The study that is proposed here would thus have to address the questions of psychology as a science and if it is, in what is it a science? Is it a constructionist, discursive, realist, eliminativist, and so on science? In response to Harré's thesis, do we have good reasons for believing the constructs of psychology are real (Antonites, 2006)? Or do we have only neurophysiology à la Churchland (Ravenscroft, 2005)?

10.3.6 Summary and conclusion

Harré grounded discursive psychology within the discursive substrate of what it means to be human. His way of expressing this language-based being is to talk of grammar that simultaneously expresses the role of language and its transient nature, i.e. its insubstantiality. He acknowledges the empirical sciences' role but restricts their activity to the material world—in fact ontologies and ways of investigating these are grammars, thus, constructions to express transient phenomena. Thus, science and its way of doing is another way of speaking about reality although Harré is fully aware of the pragmatic choices and intentions of a particular grammar. A grammar can also be called a frame or context but it emphasises its relative and constructed nature. Psychology as a science is discursive because it deals with a powerful particular that acts: acting or being an agent as a human being means to be responsible for actions and acting intentionally. Acts have meaning and Harré calls it a unique feature of human beings that they are capable of the cognitive trick of assigning meaning to

---

[446] Cf. McCrae & Costa (1995).

things and acts. The fact that meaning is attached to everything we say and do, constitutes our nature as fundamentally discursive or language based.

What does this say about psychology as a realist science? Because its basic unit is powerful particulars, namely the person, there is no need for deeper levels of psychological mechanisms. However, the postulation that persons are the powerful particulars is just that—a postulation and I cannot find evidence for an argument that persons are powerful particulars.

I want to glean a few principles from this brief discussion and postulate a few principles.

(a) Harré is a realist but his interpretation of what it means to be a self or a person is thoroughly constructionist. Already, one should ask how this is possible because realist and empiricist perspectives are opposed by constructionists. The last chapter will show that a particular brand of constructionism is grounded in realism.

(b) Language easily misleads and obviously the purpose of language/speech is not to mislead, but make claims about what is the case. In this process some of those claims become "truths" and unexamined truths at that. So when I speak of "I am doing this" a whole range of nuances are intended but "I" became fossilized as a handy manner of speaking about me as an agent. Harré's analysis warns us against reification of concepts. Fossilize in my sense thus means becoming substantial and concrete that assists in further cementing the idea of a tangible person.

(c) The orientation towards fundamental criticism or scepticism is crucial for science. Harré showed how a simple and generally accepted way of speaking about ourselves can be questioned and deconstructed (or analysed or unfolded). Of course the realist, albeit philosopher or scientist, need not accept the outcome.

(d) Harré views people as powerful particulars. The implication is that this particular can act on its own accord and has the power to be agentic. The last chapter will examine this assumption critically.

10.4 Implications of Situational Realism for psychology

In summary, the following can be indicated as implications of Situational Realism for Psychology.

(a) Ontology is the starting point as well as the independence of mind and world (Mackay & Petocz, 2011b, p.34).

(b)   Ontological egalitarianism rejects not only psychological dualism but also all specifications of different realities. Mackay and Petocz (2011b, p.35) specifically mention the illegitimate stratification of reality. This is aimed at CR and constructivism alike.

(c)   The fallacy of constitutive relations is made by operationism in psychology. The act of measurement is mistaken for the construct itself because it confuses what is known with the means of obtaining knowledge of it (Hibberd, 2011, p. 138).

(d)   A number of reified concepts simply do not exist and these include, beliefs, concepts, and mental-representations (Hibberd, 2011, p. 120).

(e)   Likewise, Hibberd (2011, p. 138) points out that a number of similar logical mistakes are made in psychology leading to the reifying of concepts. She quotes the example of a disposition such as conscientiousness which is taken for a state of an individual and utilised as an explanation why someone acted in the way they did. Dispositions, desires and intentions are relations and cannot constitute the effect, i.e. the particular behaviour.[447]

(f)   Anderson holds that everything is determined, but this position does not imply mechanistic determinism. It merely points out that every event, action or thing has a cause and is in this sense determined.

(g)   Anderson was critical of the division of the mental as cognitive, conative and affective (Baker, 1986, p. 54). The first two are relations, but the last he regarded as a genuine mental quality (Baker, 1986, pp. 56-57). The mistake of much of psychology is to regard the cognitive as primary and unitary.

(h)   Anderson is a materialist with respect to the mental, but according to Baker (1986, pp. 57-58), not a central state materialist[448] who holds that all mental processes is purely brain processes. Baker (1986, p. 60) finds Anderson hesitant to commit to full-scale materialism although he recognises one way of being, the mental or aspects thereof cannot be reduced or subsumed under physics and biology.[449] His particular variant of materialism must also be distinguished from

---

[447] *"'Conscientiousness', 'vulnerability', dispositions generally, 'intentions' and 'desires' are relations, not internal mental states. This does not preclude their causal efficacy as complex situations but their effects are not part of them"* (Hibberd, 2011, p. 138) and *"The lesson is this: to confuse relations between situations with the properties of things is to make a categorial error"* (Hibberd, 2011, p. 139).

[448] Central state materialism is known as identity theory of mind (by those that regard identity as a type of functional theory) which postulates that mind states are brain states (Jackson, 1998). Identity theory does not allow dualism of any sorts.

[449] *"That is, he takes the mental—like the neural—not just as a quality but as a thing-quality, or sort of thing, and of such a kind that it is a species of brain process (all mental are neural but some neural are not mental), just as human beings, for example, are a species of animal"* (Baker, 1986, p. 59).

strong behaviourism that denies the reality of mind, endorses only behavioural observation but not introspection (Baker, 1986, p. 58). Anderson acknowledges the reality of mind and the validity—albeit fallible—of introspection as a form of observation. He rejects all forms of dualism that include kinds of mind such as parallelism and epiphenomenalism.

10.5 Naturalist Realism and psychological science

After the discussion of various important versions of realism, and providing criticism of CR, I would like to deal with some implications of a possible Naturalist Realism for psychology and psychological science.

10.5.1   The ontic status of the psychological

The complexity of human functioning should not detract from a systematised effort to study the psychological level. However, psychology should, as other sciences, endeavour to describe and explain, and its explanatory task lies in identifying causal mechanisms (Bhaskar, 1975, 1998). However, to return to the train of thought started above, what is the ontological status of psychological phenomena? If we say that phenomena or constructs are conceptual abstractions they may or may not be ontic. It might be just a label we assign to a process or conglomerate of behaviours, such as *attention,* or it might be a reasonably obvious state such as *sad*. These examples are arbitrarily chosen—it might be relatively easy for someone to express sadness as a state of mind and label it as such. Other constructs (or phenomena) are complex, e.g. attention that is a label for a number of qualitatively different ways conscious awareness is exercised.

Maze's lessons about the vacuous nature of teleological causality are applicable here: psychology should focus on efficient causes for behaviour. Thus, an explicit focus on behaviour might not be so sensible after all; any action can be made meaningful post hoc but this still does not explain the cause of those actions. Maze proposed drives as the engines or drivers of behaviour and this puts psychology squarely within the biological domain. But can we then still speak *psychologically*? As I have said above, psychological phenomena might be names we give for complexes of behaviour or states originating in the body and brain. I do not think we can on an a priori basis argue for the realness of the psychological domain. Eventually there will be an empirical settlement of the issue, but meanwhile we are still bound to examine it and theorize about it. The value of a realist metatheory for psychology is that it forces us to re-evaluate what we have done and thought about psychology. One issue I am sure will be forced upon us is the unfolding and deconstruction of representationalism. The more we find out about the brain, the less likely we are to believe psychological nonsense dished up for us. It also means the end of purposivism and language that goes along with it.

303

Bhaskar (1975) emphasised the role of reasons as causes when discussing the psychological subject (see paragraph 8.4.1). Functionalism comes close to Bhaskar's views about the structure of the mind. From the discussion of Andersonian realism and some proponents such as Maze, it became clear that reasons could not be causes. Some reasons might be such as some beliefs or mental phenomena; the same goes for rules and other forms of organising behaviour. Given realism about human beings and their psychology, which incidentally applies to other life forms as well, we need to weed the superficially mental from the mentally real and locate functioning within the brain and body and its relations with an internal and external environment. This implies more emphasis on the biological than the mental, but while I am not advocating physiological reductionism—the psychological will always be the way we talk about ourselves—I do advocate an exploration beyond representationalism. It would be exciting and fruitful to discover another way to understand how mind, cognition, perception and consciousness work beyond representationalism.[450]

Revising our stance towards measurement in psychology is required to move it as science forward. Realism in measurement actually fulfils the constructionist ideal of not essentialising concepts (despite discrediting measurement in psychology), but instead of negating measurement, Realism calls for a careful revision of constructs—some reified, some real—to determine what we can measure when appropriate. [451] It is also true that many constructs are real but not measurable, as our discussion about meaning indicated. The most important part of our revised stance is the realisation that measurement is only one of many methods in the critical investigative arsenal of the scientist to be matched appropriately with the phenomenon under question.

10.5.2   *Impact of realism on psychological science*

Realism has a direct impact on psychology as a science in two ways, first, on the level of content, and secondly, on the level of metatheory (Mackay & Petocz, 2011b).

---

[450] Gagliano, Renton, Depczynski, and Mancuso (2014) discuss interesting research with plants and their possible memory mechanisms that will challenge the way we think of memory representation.

[451] Manicas (1998, p. 317) indicated a number of examples of objects of social science. These objects are not the same as natural science objects (mammals and atoms, etc.). The objects can also be called structures. *"For example, 'racism' surely affects opportunities for individuals, and there are social mechanisms by virtue of which what occurs does occur; but what exactly does this mean? Is such talk merely metaphorical? I think not"* (Manicas, 1998, p. 317). Manicas distinguished between persons that are real like stones and tables, and social structures that are not real in the same sense. One can see that a person is hungry, *"But the moment we say that the person is a tribesman or a revolutionary, cashed a check, or wrote a sonnet, we are presupposing tribes (a social order), a banking system, and a literary form"* (Manicas, 1998, p. 317). Thus, if we say that social structures are not real in the same sense than concrete objects such as persons and some of their characteristics, we do not deny the reality of social structures. Reality or realness of something must be clearly defined. Manicas (1998, p. 318) made the point that certain descriptions of agents presuppose social structures that demonstrate the falsity of methodological individualism, i.e. the approach that explains social structures in terms of the individual.

Its influence on content pertains to specific areas of study, such as cognition, while metatheoretically it addresses the basis on which psychological theory is built. For instance, can realism support a theory of meaning in psychology, or what does realism imply for a theory of measurement and the psychological phenomena we are investigating? Does realism have anything to say about methods? Bhaskar (1975, 1998) and others pertinently stated more than once that CR is not a method (Danermark, 2002, p. 150; Egbo, 2005, p. 275; Ron, 2002, p. 140). In the light of the discussion above it ought to be clear that Realism is not a method, but a metatheory having an implication for methods. Examples of metatheoretical considerations and content discussions are psychoanalytic theory (McIlwain, 2011), the problem of meaning (Mackay, 2011), measurement (Michell, 2000), the qualitative-quantitative divide (Petocz, 2011), and cognitive psychology (Mackay & Petocz, 2011b).

Mackay and Petocz (2011a) point out that realism is not very popular or ubiquitous in psychology despite the references to "popular" realist authors such as Bhaskar, Harré and Greenwood: [452]

> *The scattered and piecemeal state of the existing contributions by realist psychologists cannot, as it currently stands, fulfil the aim of expanding the international reception and discussion of realism. Given that the principles of realism are not typically spelled out in realist contributions, it is hardly surprising that their realism has too often been assimilated to other more popular conceptions of realism, such as are found in J. D. Greenwood's work (e.g., 1992), in Bhaskar's 'critical' realism (e.g., Archer et al., 1998), or in Harré's 'ethogenic' realism (e.g., 1986). The consequences are serious, for what discussion does ensue is characterised by persistent misunderstandings and cross-purpose talk, and the realism presented here, when mistakenly conflated with other versions that we would argue to be problematic, is left vulnerable to premature dismissal* (Mackay & Petocz, 2011a p.10).

I have tried in the discussion up to now to point out the cross-purpose talk and misconceptions that arise due to misunderstanding of what science, positivism, realism and psychology are. Unravelling these issues is important to identify the main promise that realism has for psychology (Mackay & Petocz, 2011a, p.12). Numerous topics can be debated from a realist perspective such as positivism vs. post-empiricism, the reality of concepts, quantitative vs. qualitative methods, modern vs. postmodern perspectives, social constructionism and the like. Content can also be approached from a realist perspective, and of course, this is where the empirical work of psychology lies. Much rather then, as Bhaskar (1975, p. 29) said, we cannot decide as philosophers on the *what* of psychology, but provide the metatheory for psychological science (see the discussion on page 174 above).

---

[452] Mackay and Petocz refer to a discussion of Bhaskar in Archer et al. (1998). See Mackay and Petocz (2011a, p. 14), Greenwood (1992), and Harré (1986).

10.5.3   *Naturalist realism and measurement*

With this brief overview, I would like to point out how realism motivates measurement in science. The principles of Situational Realism are important here. Realism requires that things be distinct although complex. Anderson's categories ground quantity ontologically, thus, certain things that are distinct can be counted, some can be measured but others cannot. A realist view requires the distinct existence of something in time and space, say John. The fact that John in a particular point in time and space weights 90 kg can be viewed as instantiation of an "universal" attribute "weight." The particular way Situational Realists, such as Anderson and Michell, view universals, is important. The fact that attributes, such as weight, can be shared by a number of different objects makes it a universal attribute but without requiring that it exists substantially. The general is made real in the particular, thus, the universal weight is sufficiently general to be abstract and to be transportable, but only in its instantiation in space-time is it real (Michell, 2005, p. 286).

Michell (2005, p. 287) notes that measurement in science is commensurable with the aim of science, namely, "*to find something out*" and this process fundamentally reflects the character of science, viz., critical enquiry. If measurement is a way to find something out, it follows that it should be appropriate to the subject matter or phenomenon under investigation. Thus, the investigative process entails (a) an empirical determination whether the phenomenon has a quantitative structure, and (b) an estimation of the ratio of the measured unit (Michell, 2005; 2011c, p. 245). The first issue is rarely, if ever, done and in the social science almost never. Its neglect leads to invalid reification of variables and constructs, and of course, the confusion of relations with qualities or attributes. It is important to realise that a construct such as weight, which in the example above, was regarded as an attribute is actually a relation, i.e. between the mass of John and the earth. Thus, some relations are measurable as are some attributes, but it is the scientist's duty to find out whether they have a measurable structure. It is obvious that many psychological constructs such as IQ, vulnerability or attitude are under suspicion of describing or referring to nothing real and do not have a measurable structure.

Having a measurable structure means that the thing under consideration is real. Thus, a measurable real thing has quantitative structure as a property or relation while it occupies a point in space and time. Clearly it is historical. If the measurable part is an attribute,[453] then it must be an attribute of something; if a relation, then a relation between distinctive phenomena. The example of weight is again appropriate: weight as a relation, namely, the force of attraction between two bodies, is measurable although not observable. It should be noted that weight is not the process of

---

[453] I will use the term attribute to indicate properties/characteristics and/or relations of phenomena (Michell, 2005, p. 286). An example of a measurable property is length, and of relation is weight or distance.

measurement as Bridgeman's (1927) invalid operationism requires: a thing cannot become the measurement and in psychology this view is, of course, rampant. In the case of weight then, we have something unobservable yet real and measurable. The conditions for being regarded as real according to SiR is then, occupying a distinctive point in space-time as a thing, and it must be property of a thing or a relation between things[454] (Michell, 2005, p. 287).

The complexity of the situation and the causal field is assumed in the spatio-temporal instantiation. Michell bases his realist assumptions on the Andersonian concept of literal truth, viz. making a claim about a state of affairs. Thus, the attributes of things are taken as real and some of them can be measured. The external structure of attributes consists of properties and relations. The internal structure of an attribute is "measurability," i.e. the relationship between specific instances of the attribute. Michell says that the relation should be one of ratio and linearity, namely, x times a constant should always be the same irrespective which instance is chosen. This linearity, thus, leads to a constant ratio between sets of units. In plain English, first of all, linearity means that if a constant, say 2, is chosen then any unit say 5 and 30 means that the amount doubles when multiplied by 2, thus 10 and 60. Ratio implies exactly the same, namely, proportions of 1:2 and 3:6 are exactly the same. Now, according to Michell (2005, p. 287), that a thing's attributes are measurable implies that different instances of a class of that attribute (e.g., weight) maintain the relations of ratio and this means the attribute is quantitative. Determining whether an attribute is quantitative is an empirical task and required for measurability. Michell (2005, p. 287) defines measurement under the assumption of realism as "… *the attempt to estimate the ratio between two instances of a quantitative attribute, the first being the magnitude measured, and the second being a known unit.*" According to Michell (2005, p. 287), a realist position requires a commitment to a realist view of numbers[455] as well, at least for those numbers that demonstrate sustainability of ratios between different instances of an attribute.

A realist grounding of measurement and qualitative analysis shows that it is not method that defines science, i.e. measurement is neither necessary nor sufficient for the definition of an activity to be scientific (Michell, 2003a), and again, working with meaning does not per definition preclude a process as not being scientific.

---

[454] *"To summarise the realist position: understanding measurements under the umbrella of the realist concept of truth, commits us not just to the logically independent existence of things in space and time, but also to the existence of quantitatively structured properties and relations, and to the existence of real numbers, understood as relations of ratio between specific levels of such attributes"* (Michell, 2005, p. 287).

[455] I do not think this is necessary. Although Michell (2005, p. 286) is correct in saying that the Pythagorean view of numbers underlying reality is wrong since not everything is quantifiable, a realist commitment to numbers moves back to this position. However, I have not given this issue much thought.

In a similar vein, the issue of methods also benefits from a realist grounding. The division of labour between quantitative and qualitative methods is usually done on paradigmatic grounds but their ontological requirements are relaxed for the purpose of using mixed methods (Cresswell & Plano-Clark, 2007). The increasing popularity of mixed methods bodes well with a realist ontological egalitarianism but is not motivated along these lines. In a sense, ontological differences are suspended for pragmatic reasons, but we can safely strengthen an approach of mix of methods on realist grounds but with the additional requirement that the subject matter dictates the method and method is irrelevant to the characterising of something as a science. In fact, this view can be called scientism and Petocz (2011) provides a substantial argument that this scientism is responsible for an incorrect view of the scientist-practitioner model of psychologists (see paragraph 2.2.2.2 above).

What I am advocating here is a realism where the qualitative/quantitative distinction is irrelevant, where scientists realise that the subject matter determines method and that "method" means a process assisting critical enquiry. It is also important to realise what the worth and place of measurement is.[456] Of course, psychology has, in its illustrious past, mimicked the mythic image of science (Michell, 2000, 2008b, 2011a). Thus, positivism influenced measurement, experimental methods and behaviourism, but hopefully we are moving towards a realist model of science and an understanding that quantifying is not a hallmark of science! Let me put it bluntly as someone who was trained in psychometrics and quantitative methods: the onus is on the researcher to show that the constructs he/she is measuring are amenable to measurement (Michell, 2005). Weight is fine, but who says that the constructs that we so haphazardly reify such as personality characteristics, mental properties such as IQ and other cognitive and related phenomena are real and measurable? I have conceded one thing: meaning is real but we cannot measure it, so if there are things like nonverbal ability, the question must be whether they can be measured.

10.5.4   Examples of realist research in psychology

Neuroscience currently affords exciting opportunities to discover and support many psychological phenomena and explain human behaviour. In fact, the neuronal mechanisms responsible for behaviour, and what we call psychological phenomena, fall within the ambit of a realist science without negating the psychological level of analysis. What I am saying is that when we find an explanation or mechanism on a lower level, or more basic level of explanation, such as physiology, it does not immediately imply reductionism in the sense of that we can now do away with the psychological level. In fact, most of what we did in psychology over the past years, of course, had its basis in physiological events, but because of the lack of knowledge and

---

[456] *"… the practice of measurement is continuous with scientific investigation generally: it is the attempt to find out something"* (Michell, 2005, p. 287).

methods to examine the deeper level, we had to contend with a metaphorical level of dealing with human behaviour and the mental. My contention is that we will always work with this "metaphorical" or psychological level because just as chemistry did not dissolve biology, but allows understanding of deeper mechanisms, the neuronal level will enable us to understand what is going on with people, psychologically speaking.

One of the areas of longstanding debate involves the concept of personality in psychology. On the one hand, some researchers are staunch believers in the idea of personality consisting of a number dimensions that adequately captures a person's propensity to act in a certain way in a certain context. On the other hand, constructionist criticism denies the reality of these so-called personality constructs and warns of essentialising and reifying concepts we might think are true of people. Cloninger (1987) developed a psychobiological model of personality.[457] His research led to the construction of a questionnaire capturing a number of constructs. Four temperament dimensions were identified, namely, Harm Avoidance, Novelty Seeking, Reward Dependence and Persistence. Later, three dimensions of character were added, namely, self-directedness, cooperativeness and self-transcendence (Cloninger, Svrakic, & Przybeck, 1993). Much research followed and Cloninger's model has been compared to a number of different personality models (Zuckerman & Cloninger, 1996). The most popular personality assessment framework is the so-called Big Five model based on linguistic description of persons' assessments of themselves. Common variance[458] between the different personality theories and models such as Cloninger's and the linguistic based questionnaires was found (De Fruyt, Van De Wiele, & Van Heeringen, 2000). My point is that one might, in a multi-disciplinary way, discover mechanisms underlying so-called personality constructs. Whereas we start off with patterns we observe in patients that allow us to postulate explanations on a psychological level, current neuro-research might enable us to match patterns and tendencies of behaviour to simple physiological mechanisms. Something as basic as harm avoidance, having a basis in biological structures and behaviour activated by neuro-hormones, can easily develop, in interaction with genetic factors and social and environmental influences, into the complex behaviour of someone we would normally

---

[457] *"Temperament was conceptualised as corresponding to heritable biases in memory processing involved in pre-semantic perceptual processing and encoding of concrete visuospatial structural information and affective valence. These processes were hypothesized to be functionally organized as independently varying brain systems aligned to specific monoaminergic cell bodies which in turn are responsible for autonomic responses involved in the activation, maintenance and inhibition of behavior"* (Gillespie, Cloninger, Heath, & Martin, 2003, p. 1932).

[458] Common variance refers to co-variation usually indicated by a correlation coefficient or its square.

call an introvert (see Puttonen, Ravaja, & Keltikangas-Järvinen, 2005 for an example of similar issues).[459]

I would like to conclude with the second example of, what I would call, a realist psychological study. Xu, Spelke, and Goddard (2005) examined the number representation mechanism for large arrays that makes counting difficult in infants. An infant is an open system *par excellence* and a difficult to control psychological system. The researcher does not have direct access to subjective material (such as the ability to verbalise inner states) and it is Holt's chicken problem all over again (see page 275 above). In this case the researchers had to resort to constructing a closed system in a creative way by utilising known mechanisms to uncover hidden mechanisms. As starting point they took the phenomenon of habituation as a known mechanism. Habituation works with infants as well and means the more familiar a stimulus is, the less time the infant spends exploring the stimulus visually. Consequently, changing a visual display after habituation was established had the effect of sudden prolonged visual inspection time. In this way, the researchers were able to determine that infants of 6 months can distinguish between 16 and 32 arrays of dots, i.e. a proportion of 2 but not less than 1.5 (they were not able to distinguish between 16 and 24 dots). By carefully controlling conditions such as number, spacing and size of dots along with the test conditions, they were able to uncover mechanisms

---

[459] Another example from neuropsychology of realist research where underlying biological mechanisms resonate with a psychological mechanism (or model) is the phenomenon of mirror neurons. They were discovered as recently as 1992 and named mirror neurons in 1996 by a team of researchers working on macaque monkeys (Di Pellegrino, Fadiga, Fogassi, Gallese, & Rizzolatti, 1992; Gallese, Fadiga, Fogassi, & Rizzolatti, 1996). The neurons fired in the ventral premotor cortex of the monkeys when looking at movies of movement. Now we know that similar systems exist in the human brain and they are responsible for empathy, imitating others, predicting the behaviour of others and the ability to imagine what others are thinking (Rossouw, 2013). In fact we know now that the MNS is responsible for rather sophisticated predictions of intention.

To reduce a complex account in a few sentences: a mechanism was proposed that originates in the limbic system and escalates to the cortical areas. Two MNS systems can be found, the limbic MNS anterior mesial frontal cortex and the premotor MNS in the parietal lobe and premotor cortex. Intention coding takes place in a hierarchical manner as a bottom up process. Two aspects are important with intention coding: predicting and minimising prediction error. To use a simple example: if this thing in front of me turns out not to be a sheep but a lion then I have made a prediction error. Thus, survival depends on making accurate predictions and minimising error. The coding process starts from the limbic system, thus survival needs are important and travels upward to the cortical region. It roughly corresponds to Maslow's hierarchy of needs. The MN system is aimed at enhancing survival and minimising error prediction (Rossouw, 2013). Again, there might be a deeper explanation for a psychological model described a number of years ago with only observations of patterns and tendencies of behaviour. In fact, the biological structures can propose a better and more refined model of something like, for instance, the drive and need psychological structure. Discovering and searching for underlying causal mechanisms for patterns of behaviour lies within the ambit of a realist endeavour of a scientific psychology.

that could explain the results. Other explanatory attempts were ruled out and the one that explained the data sufficiently was retained: "… *the present findings add empirical support to the thesis that a common system of number representation, shared by humans and other animals, is present and functional in 6-month-old infants*" (Xu et al., 2005, p. 98).

To my mind, this experiment is an example of scientific psychological work. First of all, it shows that approximate closure can be achieved. If we want to alleviate our worry about the difficulty of closure in open systems, we can view the experiment as an empirical and conceptual model within which we manipulate some variables and hold others constant, in order to see what generative mechanism is activated. I think we can also clarify the generalizability of the model much better than with a "pure" empirical experiment: the model reveals tendencies, and from a Situational Realist perspective, allows us, as in qualitative research, to find the general in the particular. In fact, the general-in-the-particular is an ontic principle that grounds Bhaskarian tendencies, i.e. a tendency is not an immutable law but a transfactual propensity. Is it too simplistic to say the applicability of this ontic principle requires only a single Andersonian situation? A historical occurrence of a situation implies a point in space-time but has in itself the roots of necessity or contingency. The manner in which we uncover the generative mechanism depends on what it is. Sometimes repetition hints at a mechanism, sometimes not. Sometimes empirical closure is required, at others, conceptual closure, while a combination is also possible. Then, the accessibility of reality also plays a role in how we uncover mechanisms: usually observability suffices, but more often than not, things are just not observable at all. Finally, what we currently see as nature and mind might be a continuum or different sides of the same ontological coin: who knows what future discoveries might hold?

10.6 Summary and conclusion: a naturalist realist theory of science for psychology

It would be useful to summarise the lengthy discussion presented in this thesis. The main focus is to find a viable *philosophy of science* for informing psychological science but also a *theory of science* that avoids the pitfalls of both positivism and constructionism. Bhaskar's Critical Realism fails to negotiate the way between these two positions adequately. I am suggesting the development of a Naturalist Realism that can account for the nature of psychological phenomena and indicate what would count as adequate epistemic access to these phenomena.

Danziger (1990) indicated that since psychology's inception as a science, the particular aims and methods of the natural science of the day dictated popular and scientific views of methods and theory. Laudan (1996) warns against carrying over erstwhile expert views of what science is to current views. Accounting for the ability of scientific theories to progress, i.e. maintaining the validity of core entities while going through historical change is usually what philosophical theories try to achieve. However, Laudan (1996) says focusing on the aim of science throughout periods of

311

change should be the actual target of our considerations. What people regard as the aim of science might differ and one should consider the success of science with respect to its aim. Psychological science is not exempt from this process. What it regarded as its aim throughout historical periods of change differs from what we regarded as the aim of science now. At some stage it mimicked physics as its model of science while now we have other insights about what it needs to achieve as science.

Psychology evolved particular views of the individual, the role of experiment, the aggregation of group scores and their place within psychology. To a large extent these ideas overlapped with positivism, the aims of psychology at particular stages of its development and it was influenced by the social context in which it was practiced. Thus, the groundwork has been laid for those opposed against the hegemonic view of scientific method to advocate alternatives. Of the three broad streams in psychological research, namely, experimental, eclectic and constructionist approaches, it is the latter voicing a strong opposition to positivist science in psychology. This image of science was further strengthened by the views trainers and scholars have of the scientist-practitioner model prevalent internationally in psychological training. The model flounders on the perception of science as positivistic despite the enormous amount of psychological research done world-wide and the number of practitioners in the field. It might just be that most researchers are science theoretically naïve about being labelled as positivist, they do not care or they just accept this label.

In the debate between positivists and constructionists, realism is frequently recruited on the side of positivism. The difficulty of unravelling the issues between relativism (for which constructionist positions are responsible) and realism/positivism is illustrated by the famous Loughborough debate between relativists and realists, each of whom maintains versions of constructionism. In the constructionist/relativist arsenal are issues such as essentialism and the quantitative imperative. Anti-essentialism means that things in nature have something that determines their nature. Depending on how strict one wants to be about anti-essentialism it can range from an acknowledgement that some things can be labelled otherwise to a wholesale rejection of any essences. The latter easily happens in the psychosocial domain. Thus, there is nothing in nature that determines what something is or should be. As an example: gender cannot be binary; its binary nature or essence was socially constructed. Categories of classification depends on us, not on things and in this sense, social constructionism is essentially idealist. It is a short step from denying essences to maintaining relativism.

The quantitative imperative is another major issue for both sides of the debate: measurement is widely regarded as the hallmark of science but some realists such as Michell (1999) denies this. Some things one cannot count and requires a different

method of analysis and interpretation than measurement. The ubiquity of the quantitative imperative does science as an enquiry-based enterprise a great disservice.

Classical empiricism Locke, Berkeley and Hume each provided an answer to how knowledge of reality is established. Locke rejected innate knowledge and held that all knowledge can be reduced to experience, whether external experience caused by external sensations (such as perceiving), or internal sensations (such as feeling). Ideas (or concepts) play a role in both thought (introspective experience) and sensation (external experience). Locke's version of empiricism wants to deny the innateness of some of the conceptual material and knowledge the rationalists assumed to be part of the mind's constitution, but he wants to show that thought and its operations can be linked to external sensations by means of ideas (or concepts and precepts). Everything required for the mind to understand is thus given by experience. Kant clarified Locke's vague usage of idea by referring to ideas as representations. Hume viewed ideas as the less clear counterpart of sensations or the direct impressions of sensational experience. Hume made a distinction between clear and distinct sensations and ideas which entail concepts about the sensations. Knowledge need to be traced to its simple sensations. An important contribution of Hume was his denial that concepts such as necessity and universality can be empirically grounded.

Positivism and its variants from Comte to the logical empiricists have some common principles amongst others maintaining the importance of empirical experience in establishing facts or knowledge. Despite the commonalities the views of Logical Positivists differed on a number of points. Carnap differed in his views from other Logical Positivists despite them known as the Vienna Circle. The Logical Positivists initiated a linguistic turn and in their delineation of language as formal and material (Carnap) or structure and content (Schlick) they tried to distinguish between the subjective and observational aspects of what constitutes knowledge of reality. They solved the problem of the subjectivity of meaning by externalising it: language needs to be reduced to empirical, i.e. observable, simple units and only then these expressions of fact are meaningful. Their empiricism extended to causality denying things such as unobservable mechanisms. Their solution was to formulate laws expressing the patterns of things display.

Kenneth Gergen is a prominent advocate of Social Constructionism and he reacted consistently against the empiricist and positivist image of science which he regards as the received view. Situated within the post-positivist linguistic turn Social Constructionism emphasises the central role of language in constructing reality for communities of people. Social constructionism emphasises the constitutive nature of social communities in forming the identities of individuals. Individuality and subjectivity is denied to a large extent locating the individual with society and language. Gergen emphasizes the discursive nature of reality and calls for an

313

alternative way of doing psychological science in contrast to the scientistic version, namely positivist, emphasis on measurement and control, experimentation and so on. The social nature of the psychological requires an alternative mode of investigating on par with how that particular reality is constructed, namely, through language and discursively. Epistemic access to psychological reality is gained though meaning and discourse. Gergen has a peculiar view of natural reality — he does not deny the importance of getting the mechanics right for getting to the moon or trying to save a person's life though medial science, but calls the realities they work with alternative discourses: engineers at NASA need to call a spade a spade otherwise their attempts to launch rockets will fail.

Gergen denies subjective idealism, the position critics of Social Constructionists accuse them of. However, everything that there is can be, through language, be described otherwise. Gergen says that we can easily describe a world where gravity does not play a role. Indeed we can — our discursive reality can be constructed differently from the one that we are used to. This is the point of trying to understanding cultural differences and in a sense on the level of description such a social constructionism is relatively trivial. We may even concede that what people regard as real, such as a flat world or a rising sun, are real to them. However, marrying nonessentialism with discursive processes stimulates the slide to serious relativism, subjective idealism and solipsism.

Gergen also distinguishes between a natural and psychosocial world where different rules apply, namely determinate causality vs. freedom. He holds the usual objections against the received view of science, namely, predictability, and objectivity, quest for laws. These issues cannot be applied to psychosocial phenomena because human nature is indeterminate and based on the generation of meaning. One can appreciate his insights on the social development of science, the criticism of the primacy of the individual or knowledge atomism and even unseating the hegemonic athoraty of the scientist. However, his placing "real" knowledge in the hands of the populace is precisely what Bhaskar criticises when he takes on Winch and the primacy of the empirical data of the social community. This privileged insider knowledge merely establishes the boundaries for an inverse hegemony. The group's data or understanding is now more authentic and valid than the individual's.

To clarify how realism differs from the "received" view of science, namely its empiricist variants, a brief overview of Scientific Realism is provided. It is the most prominent version of realism in the natural sciences with some applications in social and economic sciences. Chakravartty's (2007) Semirealism was discussed as a position responding on issues Structural and Entity Realism with accounting for anti-realist arguments. Semirealism accounts for both the reality of relata and relations, and holds that first order structures are real. Explanatory mechanisms reside in the properties of relata, thus relata cause other things to happen. The ontology of

314

Semirealism firmly maintains the mind independence of things that exist and also acknowledges the realness of unobservables provided they comply with two criteria, namely, the ability to detect them and to manipulate them to do other things (Hacking, 1983). Causality is thus a fundamental principle underlying the reality of unobservable things and their structures. Semirealism accounts for the stability of core elements in a theory when theories change.

However, Scientific Realism is not usually applied to social and other sciences. Mäki is one Scientific Realist that accepts the tenets of realism and applies it to economic theory. He acknowledges the difference between the realities being investigated in social science, economic theory and natural science. In order to provide a minimal application for realism in social science he proposes relaxing some of the principles of realism such as mind-independence and unobservables. However, he also proposes a particular view of modelling phenomena and systems that might be profitable for explanation outside of the natural sciences. Importantly, his view of modelling is based on the assumption of causality underlying the socio-economic sphere.

A lesser known variation of realism originating from John Anderson working in Australia in the 50s and 60s is discussed as it provides epistemological and ontological principles pertinent to the natural-psychosocial division of reality as well as allowing an ontological grounding of knowledge and science avoiding some of the pitfalls of positivism and constructionism. Anderson's Situational Realism avoids empiricist reduction of facts to atomistic simple units, regards what happens in reality as complex, causality is not something singular and linear, avoids idealism at all costs, regards reality ontologically as one, and the roots of all knowledge, science and argumentation in the ontological claim that x is y. The implication of Situational Realism's avoidance of idealism is rather radical: the Kantian categories are ontological and what we know, perceive or understand is reality per se and not mediated by representations. Thus, understanding of how things work is based on the principle of non-constitutive relations. Subject and object remains distinct and independent along with the relation but never can the one or the other along with a relation constitute either subject or object. The implication for constructionism is clear: the mind cannot in any way contribute to constituting reality.

In a sense, Anderson's principle of non-constitutive relations is paralleled by Kant's possibility of synthetic a priori judgments. Knowledge of the world that is worth something can only be obtained synthetically: if a predicate was somehow contained in the subject it would have been analytic and thus trivial. Kant investigated the possibility of metaphysics by examining the capability of the mind to reality. Classically metaphysics is concerned with objects beyond experience such as the existence of God, morality and so on, but all metaphysical claims assume the principles of necessity and universality. Kant did not want to commence dogmatically

315

(hence Hume's awakening him from dogmatic slumbers) from assuming the existence of these objects beyond experience. Kant started with the conditions for knowing rather than with the objects themselves and in his Critique he established the possibility of synthetic a priori metaphysical knowledge such as the principles of necessity and universality. These principles underlie the possibility of experience so they are synthetic and they can be known a priori. The possibility of experience depends on these synthetic a priori principles. Metaphysics as science is possible but in a restricted sense: it cannot move beyond possible experience.

The empiricists showed that knowledge needs to be derived from the senses but Hume's scepticism established that necessity is nothing more than psychological habit. Necessity cannot be derived empirically, nor logically, i.e. Hume showed that necessity cannot be derived from observing event A following event B or that it is logically or conceptually inherent in either A or B. Thus, not necessarily denying the importance of the concept of necessity, Hume assigned it to habit or custom. For Kant Hume was on the right track but the answer cannot be found in an empirical deduction but in a transcendental one. Kant showed through his transcendental method that principles such as necessity enables possible experience: thus, certain cognitive structures are required for experience but valid knowledge can only be synthetic. Thus, valid knowledge is synthetic but made possible by the a priori categories; transcendental idealism is required for valid knowledge, and because of its a priori requirement it can be called a subject-sided transcendental perspective.

What does the empiricist departure and Kant's corrective contribute to science? The empiricist grounding of knowledge in sensation or empirical reality is definitive: reality cannot harbour unobservables but what is the place of the human mind or cognition in all this? Kant showed that cognition is required but restricted to experience. The subject-sided nature of empirical realism is emphasised.

Bhaskar deliberately constructs his theory of science as transcendental realism as opposed to Kant's transcendental idealism. Positivism and empiricism in their various guises are restricted to a first level of experiential reality, i.e. to the level of pattern and regularity observation where the majority of scientific work is done. However, transcendental idealism goes a step further by postulating imaginative generative mechanisms, whilst it is only the transcendental realist that goes on to test for the reality of these generative mechanisms. He thus, restricts Kant's conceptual work to the cognitive work done for imagining possible mechanisms. In a sense this restriction which Bhaskar sees as idealistic is a watering down of Kant's contribution to the understanding of how concept and experience contribute to scientific judgments in order to gain epistemic access to reality. Bhaskar does not really explore the Kantian possibilities for realism but then again Bhaskar has to fulfil his own programme moving from experience, actualism to realism or as he calls it a depth ontology: science consists of a vertical movement uncovering generative

316

mechanisms. Clearly, the conceptual role of the scientist is acknowledged in uncovering generative mechanisms, but also the definitive role of experience in terms of constructing experiments, namely, effecting closure and thus control where the scientist can trigger causal mechanisms to reveal themselves by their causal effects. The fundamental problem for Bhaskar with Positivism is its Humean definition of causality namely, a constant conjunction of events.

Bhaskar's departure point is a transcendental argument asking about the possibility of science. Given that it does take place, how is it possible? His three stepped process of scientific activity is his answer to the transcendental question, and its culmination in discovering mind-independent generative mechanisms grounds realism. Even though the term "critical realism" caught on I think the label of transcendental realism fits his version of realism well even after Bhaskar's attempt to naturalize social science and in principle psychological reality. One should notice that his work on social reality and science changed the transcendental argument from the possibility of science per se to the possibility of naturalism in social science. I do not want to say that he inadvertently defines science as natural science or with the possibility of closure and experiment but this certainly seems to be the implication. The principles from a transcendental realist view of science, namely, the possibility of closure, experiment, enduring mechanisms, a depth ontology and so on are applied to psychosocial science in *The possibility of naturalism*. However, he acknowledges the differences between social and natural reality, namely social science is fundamentally concept-concept dependent, relatively enduring but in essence open! Thus, what he worked so hard to establish as transcendental realism cannot be transposed or applied to the psychosocial domain. Psychosocial reality is dominated by the constitutive nature of the social, and the interwoven nature of the mind trying to understand its own constructions. His realism fully acknowledges the mind-independence of a realist ontology or as he calls it the intransitive domain; he also calls the productive work of a community of people, amongst them scientists, the transitive domain. Thus, knowledge, cultural products and other sociological artifacts are the fallible intellectual products of people experiencing, knowing and speaking about their reality.

The concept dependence of intellectual work about the intransitive domain makes it fallible, corrigible and revisable. It lies on the same level as imagining generative mechanisms but then tested empirically in the case of natural phenomena as in experimentation, but as explanatory models in the case of psychosocial phenomena. Bhaskar emphatically avoids the epistemic fallacy, namely the fact that what the mind is capable of should determine what there is. Epistemology cannot as in Kant's case, precede ontology; it is only in scientific work that the order is reversed. The precedence he gives to ontology above epistemology begs the question of how one should derive the nature of reality without engaging with it epistemically. His transcendental argument postulates the structured and differentiated nature of reality

317

as enabling the practice of science which also boils down to assuming principles such as necessity and universality exist otherwise experience (and scientific experience) cannot be possible. Thus, Bhaskar does not move beyond Kant's Transcendental Idealism in a fundamental sense of relating conceptual work and empirical experience differently than Kant did. The problem shows up especially when dealing with a concept-concept dependent level of reality. Bhaskar merely deepens the nature-psychosocial divide although I agree that naturalism in the psychosocial domain ought to be our aim.

The critical discussion of idealism, representationalism, direct realism, principles of non-constitutive relations, and ontological egalitarianism make an intelligible and grounded psychological science possible. Bhaskar's naturalisation of sociological and psychological science should be radically naturalised, i.e. it entails a rejection of a wholly concept dependent reality in favour of one reality bounded in space-time.

Psychology is defined as a science focus on the psychosocial domain and the natural domain and in both the search for laws and regularity is prominent. This division reflects the assumptions of the transcendental argument namely categories residing in the mind and/or externally. That such a broad definition cannot satisfy what we understand as science was illustrated with for instance the mythic image of psychological science constructed in the nexus of scientist-practitioner views of psychological training. Put simply, the natural side is undergirded by a positivistic view of empirical science whilst the psychosocial side should be studied from a perspective of social constructionism and meaning expressed in language.

The New realists, essentially a movement in psychology at the start of the 20th century, eschewed idealism in psychology especially representational or the idea that we have double objects to deal with in perception and of course that the mind dictates what is real. Gibson's ecological realism is perhaps the best known representative of direct realism in psychology, i.e. that the external environment is sufficiently structured. The implication of a structured environment is that human behaviour provides sufficient information for meaningful understanding without denying the existence of the mind and consciousness. However, Manicas, as an example, denies that psychology is a science of behaviour! According to him the psychosocial and the natural domains cannot be reduced to each other, thus the psychosocial should be studied on its own terms. This is Bhaskar's result as well. Manicas sees the psychosocial as independent of the biological (natural) but conditioned by it. The same goes for the psychological - it is formed by the cultural and social. Manicas comes to the same conclusion as Bhaskar, i.e. the fundamental openness of the psychosocial domain and the difficulty of conducting experiments therein.

318

Harré, a realist in the natural domain but constructionist in the social, has his own unique way of relating the psychosocial and the natural domains. One such move is to maintain the realist assumption, also found in Bhaskar, of powerful particulars. In the natural domain, and along with SiR's non-constitutive relations, powerful particulars make sense: in some way there are simply things that cause other things. However, Harré extrapolates this view to the agent or the person as powerful particular beyond whose expressive act nothing else except the biological lies. A discursive psychology is thus the only valid way of investigating the psychological. However, note that Harré's expressive and discursive reality boils down to a different sort of externalism. In fact, we cannot see into the minds of others and all we have is meaning constituted in the acts of discourse and expression. Harré and other social constructionists just went one step further than, for instance, Maze and the other New Realists by acknowledging acts of expression or behaviour that ends in communicating meaning as the real level of psychological reality! Harré even avoids idealism or representationalism and his position reflects that of Manicas' view of cultural and biological conditioning of the psychological.

Discursiveness does not explain meaning, it expresses it; acknowledging meaning as real does not imply it is concrete, an unobservable or a power. However, we know that the meaning narratives has can change individuals, communities and society. But let us take step back: is meaning internal or external? Does it reside in the mind or in objects? According to the constructionists such as Harré it resides in language and discursiveness, or in the external acts of communicating, thus not in the mind, at least not in the individual mind because the community or the social is primary (Gergen). Harré provides a plausible account of a possible process of how the social conditions the psychological in order to get to the point of expressing meaning. According to Harré we have discursiveness as the psychological, and the biological. The agent as powerful particular does not have deeper psychological levels to account for surface behaviour. As soon as we seek something deeper it amounts to the metaphorical otherwise we jump right into the neurological.

While Bhaskar denies psychosocial reality the possibility of experiment due to its reality being fundamentally open, Harré says measurement of so-called psychological constructs is impossible because of the discursive nature of the psychological beyond which there are no other things to measure. Both authors display their perceptions of what science is (possibility of experiment and measurement) and its inapplicability to the psychosocial. I am not convinced that that either the possibility of experiment or measurement are definitive hallmarks of what science is. According to the arguments of Michell a realist (which he defines as empirical realist but it means something different than Bhaskar's term) science does not regard the measurement imperative as a *sine qua non* for its work: it is a method of discovery and along with experimentation (or rather the possibility of closure) a way of providing epistemic access to reality being studied. Although some authors of

the constructionist variety regard normativity and rules as the replacement for causality in the natural domain, I think an argument can be made for causality (and maybe other principles such as universality (and maybe other principles such as universality and related principles) as necessary for the possibility of experience whether experience of nature or the psychosocial. Therein lies naturalism that forms the basis for a unitary ontology, namely, causality enabling experience.

As in the natural domain, anything might count as a cause, from reasons, hormones to meaning. I also have no objection to seeing the psychological as discursive although one must point out that both Gergen and Harré provide meaningful structures enabling one to understand something such as identity. Discursivity does not imply not enduring, non-categorizing, unstoppable fluidness or chaos and lack of meaningful structure! By taking the given not for granted and pointing out alternative accounts for claims of what is, the avenue to the possibility of difference is opened and thus discourse. We can thus extend naturalism to discursivity as well: it need not be verbal but can also be expressed in the methods natural scientists use. Discursivity becomes critical enquiry when we move from psychosocial processes enabling everyday knowledge to scientific approaches challenging that knowledge or claims.

Science is not characterised by the ability to quantify, the ability to find causal laws, the ability to operationalise and measure anything that moves, the ability to be value free, objective, do experimentation, work with things that do not involve meaning, or that can be observed (Michell, 2008b).[460] Science is not some sort of entity, set of values or cognitive framework dictating what we should believe. Doing science lies solely in critical enquiry and I think this follows from a simple *naturalist* realist principle, namely, pointing out a state of affairs: x is y. Science does not prescribe the method, neither quantification nor understanding, but merely approaching things in a critical manner by contesting the ontological claims we make. Of course, the difference between natural science and social/human science was always characterised with the nomothetic/ideographic model, but science as a whole is critical and depending on what we work with the requirement for measurement and/or hermeneutic understanding comes into play. It is not as if the experimentalist suddenly becomes a clueless rule-following zombie when calculating values for the five percent exceedance probability. We all impute meaning, construct, interpret and critically try to understand what is going on with the stuff we work with, which in this case happens to be people or parts of them.

---

[460] *"Genuine science does not presuppose the appropriateness of any individual method (such as measurement), for that must be empirically determined via sensitivity to the nature of the subject matter under investigation"* (Petocz, 2011, pp.708)

Adience. (2015). *Oxford English dictionary (OED) online.* Retrieved from http://0-www.oed.com.innopac.up.ac.za/view/Entry/304490?redirectedFrom=adience

Ainsworth, P. M. (2010). What is ontic structural realism? *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics, 41*. doi:10.1016/j.shpsb.2009.11.001

Alasuutari, P. (2010). The rise and relevance of qualitative research. *International Journal of Social Research Methodology, 13*(2), 139-155. doi:10.1080/13645570902966056

Alexander, S. (1920). *Space, time and deity: the Gifford Lectures at Glasgow, 1916-1918.* London: Macmillan.

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.

Anderson, J. (1962a). The cogito of Descartes (1936). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 101-114). Sydney: Australian Digital Collections.

Anderson, J. (1962b). Design (1934). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 88-100). Sydney: Australian Digital Collections.

Anderson, J. (1962c). Empiricism (1927). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 3-14). Sydney: Australian Digital Collections, The University of Sydney.

Anderson, J. (1962d). Empiricism and logic (1962). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 163-188). Sydney: Australian Digital Collections.

Anderson, J. (1962e). The knower and the known (1927). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 27-40). Sydney: Australian Digital Collections.

Anderson, J. (1962f). The non-existence of consciousness (1929). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 60-67). Sydney: Australian Digital Collections, The University of Sydney.

Anderson, J. (1962g). The place of Hegel in the history of philosophy (1932). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 79-87). Sydney: Australian Digital Collections.

Anderson, J. (1962h). The problem of causality (1938). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 126-136). Sydney: Australian Digital Collections.

Anderson, J. (1962i). Realism and some of its critics (1930). In J. Anderson (Ed.), *Studies in empirical philosophy [A machine readable transcription]* (pp. 41-59). Sydney: Australian Digital Collections.

Anderson, J. (1962j). Studies in empirical philosophy [A machine readable transcription]. Retrieved from http://adc.library.usyd.edu.au/view?docId=anderson/xml-main-texts/anderson049.xml

Anderson, J. (2005). *Space-time and the proposition: The 1944 lectures on Samuel Alexander's Space, Time and Deity.* Sydney: Sydney University Press.

Anderson, R. L. (2010). The introduction to the Critique: Framing the question. In P. Guyer (Ed.), *The Cambridge companion to Kant's Critique of pure reason* (pp. 75-92). Cambridge: Cambridge University Press.

Anderson, S. (Ed.) (2004). *Collins English dictionary* (Desktop edition and CD-rom ed.). Glasgow: HarperCollins.

Anthropometry. (2015). *Oxford English dictionary (OED) online.* Retrieved from http://0-www.oed.com.innopac.up.ac.za/view/Entry/8444

Antonites, A. (2006). Relativisme as epistemologiese probleem. *Tydskrif vir Geesteswetenskappe, 46*(1), 27-51.

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

Archer, M. S. (1995). *Realist social theory: the morphogenetic approach.* Cambridge: Cambridge University Press.

Asay, T. P., Lambert, M. J., Gregersen, A. T., & Goates, M. K. (2002). Using patient-focused research in evaluating treatment outcome in private practice. *Journal of Clinical Psychology, 58*(10), 1213-1225.

Audi, R. (Ed.) (1995). *The Cambridge dictionary of philosophy.* Cambridge: Cambridge University Press.

Ayer, A. (1971). *Language, truth and logic.* Middlesex: Penguin.

Ayers, M. (1998). Locke, John (1632–1704). *Routledge encyclopedia of philosophy.* Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/locke-john-1632-1704/v-1/the-structure-of-lockes-empiricism

Ayers, M. (2005). Was Berkeley an empiricist or a rationalist? In K. Winkler (Ed.), *The Cambridge companion to Berkeley* (pp. 34-62). Cambridge: Cambridge University Press.

Baedeker, Karl. (2006). *Encyclopædia Britannica*: Encyclopædia Britannica 2006 Ultimate Reference Suite DVD.

321

Baker, A. J. (1986). *Australian realism: the systematic philosophy of John Anderson*. Cambridge: Cambridge University Press.

Barnette, V. (2006). A scholarly work commitment in practice. *Counselling Psychology Quarterly, 19*(3), 253-263. doi:10.1080/09515070600959334

Bechtel, W. (1998). Representations and cognitive explanations: assessing the dynamicist's challenge in cognitive science. *Cognitive Science, 22*, 295-318.

Benton, T. (1998). Realism and social science: some comments on Roy Bhaskar's "The possibility of naturalism". In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & A. Norrie (Eds.), *Critical realism: essential readings* (pp. 297-312). London: Routledge.

Bernstein, R. J. (1983). *Beyond objectivism and relativism : science, hermeneutics, and praxis*. Oxford: Blackwell.

Betti, E. (1972). *Die Hermeneutik als allgemeine Methodik der Geisteswissenschaften* (2. durchges. Aufl. ed.). Tubingen: Mohr (Siebeck).

Bhaskar, R. (1975). *A realist theory of science*. London: Verso.

Bhaskar, R. (1986). *Scientific realism and human emancipation*. London: Verso.

Bhaskar, R. (1989). *Reclaiming reality: a critical introduction to contemporary philosophy*. London: Verso.

Bhaskar, R. (1993). *Dialectic: The Pulse of Freedom*. New York: Verso.

Bhaskar, R. (1998). *The possibility of naturalism: a philosophical critique of the contemporary human sciences* (3 ed.). London: Routledge.

Bhaskar, R. (2002). *Reflections on meta-reality : transcendence, emancipation, and everyday life*. New Delhi ; Thousand Oaks, Calif.: Sage Publications.

Bhaskar, R. (2005). *The possibility of naturalism: a philosophical critique of the contemporary human sciences* (3 ed.). London: Routledge.

Bhaskar, R. (2008). *A realist theory of science*. London: Routledge.

Bird, A., & Tobin, E. (2015). Natural kinds. *The Stanford encyclopedia of philosophy.* Retrieved from <http://0-plato.stanford.edu.innopac.up.ac.za/archives/spr2015/entries/natural-kinds/

Blackburn, S. (1996). *The Oxford dictionary of philosophy*. Oxford: Oxford University Press.

Blackburn, S. (2008). Relativism. *The Oxford dictionary of philosophy.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199541430.001.0001/acref-9780199541430-e-2685.

Blaikie, N. W. H. (2007). *Approaches to social enquiry: advancing knowledge* (2 ed.). Cambridge, UK: Polity Press.

Boag, S. (2007). Realism, self-deception and the logical paradox of repression. *Theory & Psychology, 17*(3), 421-447. doi:10.1177/0959354307077290

Boag, S. (2008). `Mind as Feeling' or Affective Relations?: A Contribution to the School of Andersonian Realism. *Theory & Psychology, 18*(4), 505-525. doi:10.1177/0959354308091841

Boag, S. (2014). Ego, drives, and the dynamics of internal objects. *Frontiers in Psychology, 5*. doi:10.3389/fpsyg.2014.00666

Bobulescu, R. (2011). Critical Realism versus Social Constructivism in International Relations. *Philosophical Economics, 4*(2), 37-64.

Boyd, R. (1991a). Confirmation, semantics, and the interpretation of scientific theories. In R. Boyd, P. Gasper, & J. D. Trout (Eds.), *The philosophy of science* (pp. 3-35). Cambridge, MA: MIT Press.

Boyd, R. (1991b). Observations, explanatory power, and simplicity: toward a non-Humean account. In R. Boyd, P. Gasper, & J. D. Trout (Eds.), *The philosophy of science* (pp. 349-377). Cambridge, MA: MIT Press.

Brakel, L. A. W. (2004). The Psychoanalytic assumption of the primary process: extrapsychoanalytic evidence and findings. *Journal of the American Psychoanalytic Association, 52*(4), 1131-1161. doi:10.1177/00030651040520040201

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:10.1191/1478088706qp063oa

Bridgman, P. W. (1927). *The logic of modern physics*. New York: Macmillan.

Bryant, C. G. A. (1985). *Positivism in social theory and research*. Johannesburg: Macmillan.

Burr, V. (1995). *An introduction to social constructionism*. Huddersfield, England: Taylor & Frances.

Campbell, N. R. (1957). *Foundations of science: the philosophy of theory and experiment*. New York: Dover Publications.

Carnap, R. (1981a). Logical foundations of the unity of science. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 112-129). Oxford: Basil Blackwell.

Carnap, R. (1981b). Protocol statements and the formal mode of speech. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 150-160). Oxford: Basil Blackwell.

Cartwright, N. (1998). Causation. *Routledge encyclopedia of philosophy.* Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/causation/v-1/

Chakravartty, A. (2007). *A metaphysics for scientific realism: knowing the unobservable.* Cambridge: Cambridge University Press.

Chang, K., Lee, I.-L., & Hargreaves, T. A. (2008). Scientist versus Practitioner–An abridged meta-analysis of the changing role of psychologists. *Counselling Psychology Quarterly, 21*(3), 267-291. doi:10.1080/09515070802479859

Charles, E. P. (2012a). Introduction—Finding Holt. In E. P. Charles (Ed.), *A new look at new realism: the psychology and philosophy of E.B. Holt* (pp. xxxi-lviii). New Brunswick, USA: Transaction Publishers.

Charles, E. P. (2012b). *A new look at new realism: the psychology and philosophy of E.B. Holt.* New Brunswick, USA: Transaction Publishers.

Choi, B. Y., Park, H., Yang, E., Lee, S. K., Lee, Y., & Lee, S. M. (2011). Understanding career decision self-efficacy: A meta-analytic approach. *Journal of Career Development, 39*(5), 443-460. doi:10.1177/0894845311398042

Chung, M. C., & Hyland, M. (2012). *History and philosophy of psychology.* Chichester ; Malden, MA: Wiley-Blackwell.

Chwalisz, K. (2003). Evidence-Based Practice: A Framework for Twenty-First-Century Scientist-Practitioner Training. *The Counseling Psychologist, 31*(5), 497-528. doi:10.1177/0011000003256347

Clark, K. J. (2016). Naturalism and its discontents. In K. J. Clark (Ed.), *The Blackwell companion to naturalism* (pp. 1-15). Hoboken: Wiley Blackwell.

Cloninger, C. R. (1987). A systematic method for clinical description and classification of personality variants: a proposal. *Archives of general psychiatry, 44*, 573–588. Retrieved from http://archpsyc.jamanetwork.com/article.aspx?articleid=494070

Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. *Archives of general psychiatry, 50*, 975–990. Retrieved from http://archpsyc.jamanetwork.com/article.aspx?articleid=496431

Collier, A. (1994). *Critical Realism: An Introduction to Roy Bhaskar's Philosophy.* New York: Verso.

Collier, A. (1998, 1 March 2008). Critical realism. *Routledge encyclopedia of philosophy.* Retrieved from http://0-.www.rep.routldege.com.innopac.up.ac.za:80/article/R003

Colman, A. (2008). Social constructionist psychology. *A dictionary of psychology.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199534067.001.0001/acref-9780199534067-e-9399.

Colman, A. (2009). Reify. *A dictionary of psychology.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199534067.001.0001/acref-9780199534067-e-7088.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: design & analysis issues for field settings.* Boston: Houghton Mifflin.

Copleston, F. (1964). *A history of modern philosophy. Vol 5. Modern Philosophy: The British philosophers. Part II. Berkley to Hume.* New York: Image Books.

Costall, A. (2012). Against representationalism: James Gibson's secret intellectual debt to E. B. Holt. In E. P. Charles (Ed.), *A new look at new realism: the psychology and philosophy of E.B. Holt* (pp. 243-251). New Brunswick, USA: Transaction Publishers.

Craig, E. (Ed.) (2005). *The shorter Routledge encyclopedia of philosophy.* London: Routledge.

Creaven, S. (2002). The pulse of freedom? Bhaskar's dialectic and Marxism. *Historical Materialism, 10*(2), 77-141.

Cresswell, J. W., & Plano-Clark, V. L. (2007). Designing and conducting: mixed methods research.

Cruickshank, J. (2004). A tale of two ontologies: an immanent critique of critical realism. *The Sociological Review, 52*(4), 567-585. doi:10.1111/j.1467-954X.2004.00496.x

Cruickshank, J. (2012). Positioning positivism, critical realism and social constructionism in the health sciences: a philosophical orientation. *Nursing inquiry, 19*(1), 71-82. doi:10.1111/j.1440-1800.2011.00558.x

Cusumano, E. P., & Raz, A. (2014). Harnessing psychoanalytical methods for a phenomenological neuroscience. *Frontiers in Psychology, 5*(334), 1-5. doi:10.3389/fpsyg.2014.00334

Daly, C. (2011). Properties. *Routledge encyclopedia of philosophy.* Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/properties-1/v-1/

Danermark, B. (2002). *Explaining society: critical realism in the social sciences.* London: Routledge.

Danziger, K. (1990). *Constructing the subject: Historical origins of psychological research.* Cambridge: Cambridge University Press.

De Fruyt, F., Van De Wiele, L., & Van Heeringen, C. (2000). Cloninger's psychobiological model of temperament and character and the five-factor model of personality. *Personality and Individual Differences, 29*(3), 441-452. doi:10.1016/S0191-8869(99)00204-4

De la Rey, C., & Ipser, J. (2004). The call for relevance: South African psychology ten years into democracy. *South African Journal Of Psychology, 34*(4), 544-552. Retrieved from http://repository.up.ac.za/handle/2263/14269

De la Rey, C., & Kottler, A. (1999). Societal transformation: gender, feminism and psychology in South Africa. *Feminism & Psychology, 9*(2), 119-126.

De Pierris, G., & Friedman, M. (2013). Kant and Hume on causality. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/win2013/entries/kant-hume-causality/

De Waal, C. (2012). Preface. In E. P. Charles (Ed.), *A new look at new realism: the psychology and philosophy of E.B. Holt* (pp. xiii-xxvii). New Brunswick: Transaction Publishers.

Derrida, J. (1998). *Of grammatology* (Corrected ed.). Baltimore: Johns Hopkins University Press.

Derrida, J. (2005). *Writing and difference* (A. Bass, Trans.). London: Routledge.

Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G. (1992). Understanding motor events: a neurophysiological study. *Experimental brain research, 91*, 176–180.

Dudley, W. (2007). *Understanding German Idealism*. Stocksfield: Acumen.

Duncan, N., Stevens, G., & Canham, H. (2014). Living through the legacy: the Apartheid Archive Project and the possibilities for psychosocial transformation. *South African Journal Of Psychology, 44*(3), 282-291. doi:10.1177/

Dunne, T., & Schmidt, B. C. (2014). Realism. In J. Baylis, S. Smith, & P. Owens (Eds.), *The globalization of world politics: an introduction to international relations* (6 ed., pp. 99-112). Oxford: Oxford University Press.

Durkheim, E. (1959). *Suicide: a study in sociology*. London: RKP.

Durkheim, E. (1982). *The rules of sociological method* (W. D. Halls, Trans.). London: Macmillan.

Edwards, D., Ashmore, M. T., & Potter, J. (1995). Death and Furniture: the rhetoric, politics and theology of bottom line arguments against relativism. *History of the Human Sciences, 8*(2), 25-49. doi:10.1177/095269519500800202

Egbo, B. (2005). Emergent paradigm: Critical realism and transformative research in educational administration. *McGill Journal of Education, 40*(2), 267-284. Retrieved from http://mje.mcgill.ca

Falcon, A. (2015). Aristotle on Causality *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/spr2015/entries/aristotle-causality/

Feyerabend, P. K. (1993). *Against method* (3rd ed.). London: Verso.

Fleetwood, S. (2006). Re-thinking labour markets: A critical realist-socioeconomic perspective. *Capital & Class, 30*(2), 59-89.

Fogelin, R. J. (2001). *Routledge philosophy guidebook to Berkeley and the Principles of human knowledge*. New York: Routledge.

French, S., & Ladyman, J. (2003). The dissolution of objects: Between platonism and phenomenalism. *Synthese, 136*(1), 73-77.

Friedman, M. (1992). Causal laws and the foundations of natural science. In P. Guyer (Ed.), *The Cambridge companion to Kant* (pp. 161-199). Cambridge: Cambridge University Press.

Friedman, M. (1998). Logical positivism. *Routledge encyclopedia of philosophy.* Retrieved from http://0-www.rep.routledge.com.innopac.up.ac.za/article/Q061SECT3Zahavi,

Frigg, R., & Votsis, I. (2011). Everything you always wanted to know about structural realism but were afraid to ask. *European Journal for Philosophy of Science, 1*(2), 227-276. doi:10.1007/s13194-011-0025-7

Fumerton, F. A. (1993). Phenomenalism. In G. H. R. Parkinson (Ed.), *An encyclopaedia of philosophy* (pp. 330-333). London Routledge.

Gadamer, H.-G. (1977). *Philosophical hermeneutics*. Berkeley: Univ. of California Press.

Gadamer, H.-G. (2004). *Truth and method* (J. Weinsheimer & D. G. Marshall, Trans. 2nd, rev. ed.). London: Continuum.

Gagliano, M., Renton, M., Depczynski, M., & Mancuso, S. (2014). Experience teaches plants to learn faster and forget slower in environments where it matters. *Oecologia, 175*(1), 63-72. doi:10.1007/s00442-013-2873-7

Gallese, V., Fadiga, L., Fogassi, L., & Rizzolatti, G. (1996). Action recognition in the premotor cortex. *Brain, 119*, 593–609. Retrieved from http://brain.oxfordjournals.org/content/brain/119/2/593.full.pdf

Gauld, A., & Shotter, J. (1977). *Human action and its psychological investigation*. London: Routledge.

Geras, N. (1995). Language, truth and justice. *New Left Review, 209*, 110-135.

Gergen, K. J. (1982). *Toward transformation in social knowledge*. New York: Springer-Verlag.

Gergen, K. J. (1999). *An invitation to social construction*. London: Sage.

Giancoli, D. C. (1988). *Physics for scientists and engineers*. Englewood Cliffs, NJ: Prentice Hall.

Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.

Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston: Houghton Mifflin.

Gillespie, N. A., Cloninger, C. R., Heath, A. C., & Martin, N. G. (2003). The genetic and environmental relationship between Cloninger's dimensions of temperament and character. *Personality and Individual Differences, 35*, 1931-1946. doi:10.1016/S0191-8869(03)00042-4

Gower, B. (2000). Cassirer, Schlick and 'structural' realism: The philosophy of the exact sciences in the background to early logical empiricism. *British Journal for the History of Philosophy, 8*(1), 71-106. doi:http://dx.doi.org/10.1080/096087800360238

Graeber, D. (2014, 4 December 2014). Roy Bhaskar obituary. *the Guardian*. Retrieved from http://www.theguardian.com/world/2014/dec/04/roy-bhaskar

Greenwood, J. D. (1992). Realism, empiricism and the social constructionism: psychological theory and the social dimensions of mind and action. *Theory and Psychology, 2*(2), 131-151.

Groff, R. (2008). Introduction: Realism about causality. In R. Groff (Ed.), *Revitalizing causality: Realism about causality in philosophy and social science* (pp. 1-10). London: Routledge.

Gul, S. (2011). Critical realism and project management: Revisiting the noumenal and phenomenal. *African Journal of Business Management, 5*(31), 12212-12221. doi:10.5897/AJBM11

Hacking, I. (1983). *Representing and intervening: Introductory topics in the philosophy of natural science*. Cambridge: Cambridge University Press.

Hacking, I. (1999). *The social construction of what?* Cambridge, Mass: Harvard University Press.

Hacking, I. (2002). *Historical ontology*. Cambridge: Harvard University Press.

Hamlyn, D. W. (1995). Philosophical idealism. In T. Honderich (Ed.), *The Oxford companion to philosophy* (pp. 386-388). New York: Oxford University Press.

Hanfling, O. (1981a). *Logical positivism*. Oxford: Basil Blackwell.

Hanfling, O. (Ed.) (1981b). *Essential readings in logical positivism*. Oxford: Basil Blackwell.

Harré, R. (1983). *Personal being: A theory for individual psychology*. Oxford: Blackwell.

Harré, R. (1986). *Varieties of realism: A rationale for the natural sciences*. New York: Blackwell.

Harré, R. (1998a). Recovering the experiment. *Philosophy, 73*(285), 353-377. Retrieved from http://journals.cambridge.org/abstract_S003181919800014X

Harré, R. (1998b). *The singular self: An introduction to the psychology of personhood*. London: Sage.

Harré, R. (2002a). *Cognitive science: A philosophical introduction*. London: Sage.

Harré, R. (2002b). Rom Harré on social structure and social change: Social reality and the myth of social structure. *European Journal of Social Theory, 5*(1), 111-123. doi:10.1177/13684310222225333

Harré, R., & Bhaskar, R. (2005). How to change reality: Story vs. structure. In J. Lopez & G. Potter (Eds.), *After postmodernism: An introduction to critical realism* (pp. 22-39). New York: Continuum.

Hartwig, M. (2007). *Dictionary of critical realism*. London: Routledge.

Heft, H. (2012). Holt's "recession of the stimulus" and the emergence of the "situation" in psychology. In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 191-219). New Brunswick, USA: Transaction Publishers.

Heinämaa, S., & Reuter, M. (Eds.). (2008). *Psychology and philosophy: Inquiries into the soul from late scholasticism to contemporary thought*. [S.l.]: Springer.

Herborth, B. (2012). Theorising theorising: Critical Realism and the quest for certainty. *Review of International Studies, 38*. doi:10.1017/S0260210511000660

Hibberd, F. J. (2001a). Gergen's social constructionism, logical positivism and the continuity of error: Part 1: Conventionalism. *Theory & Psychology, 11*(3), 297-321. doi:10.1177/0959354301113002

Hibberd, F. J. (2001b). Gergen's social constructionism, logical positivism and the continuity of error: Part 2: Meaning-as-use. *Theory & Psychology, 11*(3), 323-346. doi:10.1177/0959354301113003

Hibberd, F. J. (2001c). Logical positivism and Gergen's social constructionism: No radical disjunction in twentieth century psychological metatheory. In J. R. Morss, N. Stephenson, & H. van Rappard (Eds.), *Theoretical issues in psychology: Proceedings of the International Society for Theoretical Psychology 1999 conference* (pp. 171-180). Springer, US: Kluwer Academic.

Hibberd, F. J. (2001d). Relativism versus Realism - all but a specious dichotomy. *History of the Human Sciences, 14*(3), 102-107. doi:10.1177/09526950122121023

Hibberd, F. J. (2002). Reply to Gergen. *Theory & Psychology, 12*(5), 685-694. doi:10.1177/0959354302012005899

Hibberd, F. J. (2005). *Unfolding social constructionism*. New York: Springer.

Hibberd, F. J. (2010). Situational realism, critical realism, causation and the charge of positivism. *History of the Human Sciences, 23*(4), 37-51. doi:10.1177/0952695110373423

Hibberd, F. J. (2011). John Anderson's development of (situational) realism and its bearing on psychology today. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 119-158). Boston: Brill.

Hickson, J., & Kriegler, S. (1991). The mission and role of psychology in a traumatised and changing society: The case of South Africa. *International Journal of Psychology, 26*(6), 783-793.

Hirsch, E. D. (1976). *The aims of interpretation*. Chicago: University of Chicago Press.

Holdcroft, D. (1998, 1 March 2008). Saussure, Ferdinand de (1857–1913). *Routledge encyclopedia of philosophy*. Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/saussure-ferdinand-de-1857-1913/v-1/language-as-a-system-of-signs

Holt, E. B. (1914). *The concept of consciousness*. George Allen & Co.: London.

Holt, E. B. (1915). *The Freudian wish and its place in ethics*. New York: H. Holt.

Holt, E. B., & Brown, H. C. (1931). *Animal drive and the learning process: an essay toward radical empiricism, by Edwin B. Holt. Vol. 1. With a supplementary essay on this material world, by Harold Chapman Brown*. New York: H. Holt.

Holt, E. B., Marvin, W. T., Montague, W. P., Perry, R. B., Pitkin, W. B., & Spaulding, E. G. (1912). *The New Realism: Coöperative studies in philosophy*. New York: Macmillan Co.

Honderich, T. (Ed.) (1995). *The Oxford companion to philosophy*. Oxford: Oxford University Press.

Hume, D. (1962). A treatise of human nature, book I of the understanding. In D. G. C. MacNabb (Ed.), *A treatise of human nature* (pp. 39-331). Glasgow, UK: Fontana.

Jackson, F. (1986). What Mary didn't know. *The Journal of Philosophy, 83*(5), 291-295.

Jackson, F. (1998). Mind, identity theory of. *Routledge encyclopedia of philosophy*. Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/mind-identity-theory-of/v-1/

James, W. (1890). *The principles of psychology* (Vol. 1). New York: H. Holt.

James, W., & James, H. (1920). *The letters of William James* (Vol. 1). Boston: Atlantic Monthly Press.

Jones, J. L., & Mehr, S. L. (2007). Foundations and assumptions of the scientist-practitioner model. *American Behavioral Scientist, 50*(6), 766-771. doi:10.1177/0002764206296454

Jones, W. T. (1969). *Hobbes to Hume* (2nd ed.). New York: Harcourt Brace.

Kaidesoja, T. (2005). The trouble with transcendental arguments: Towards a naturalization of Roy Bhaskar's early realist ontology. *Journal of Critical Realism, 4*(1), 28-61.

Kaidesoja, T. (2009). Bhaskar and Bunge on social emergence. *Journal for the Theory of Social Behaviour, 39*(3), 300-322. doi:10.1111/j.1468-5914.2009.00409.x

Kandel, E. R. (1999). Biology and the future of psychoanalysis: A new intellectual framework for psychiatry revisted. *American Journal of Psychiatry, 156*, 505-524.

Kant, I. (1934). *Critique of pure reason* (J. M. D. Meiklejohn, Trans.). London: Dent.

Kant, I. (1998). *Critique of pure reason* (P. Guyer & A. W. Wood, Trans.). Cambridge: Cambridge University Press.

Kant, I., & Bax, E. B. (1891). *Kant's Prolegomena, and Metaphysical foundations of natural science* (2d ed.). London: G. Bell and sons.

Keat, R. (1981). *The politics of social theory : Habermas, Freud and the critique of positivism*. Oxford: Blackwell.

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt College Publishers.

Kraft, V. (1953). *The Vienna circle: the origin of neo-positivism, a chapter in the history of recent philosophy*. New York: Philosophical Library.

Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago: University of Chicago Press.

Kukla, A. (2000). *Social constructivism and the philosophy of science*. London: Routledge.

Kusch, M. (2005). *Psychological knowledge: A social history and philosophy*. London: Routledge.

Kvale, S. (1992). *Psychology and postmodernism*. London: Sage.

Ladyman, J. (1998). What is structural realism? *Studies In History and Philosophy of Science Part A, 29*(3), 409–424.

Ladyman, J. (2014). Structural realism. *The Stanford encyclopedia of philosophy*. Retrieved from http://plato.stanford.edu/archives/spr2014/entries/structural-realism/

Ladyman, J., & Ross, D. (2007). *Every thing must go: Metaphysics naturalized*. Oxford: Oxford University Press.

Lakatos, I., & Musgrave, A. (1974). *Criticism and the growth of knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London 1965* (corr. ed.). London: Cambridge University Press.

Lampropoulos, G. K., Goldfried, M. R., Castonguay, L. G., Lambert, M. J., Stiles, W. B., & Nestoros, J. N. (2002). What kind of research can we realistically expect from the practitioner? *Journal of Clinical Psychology, 58*(10), 1241-1264. doi:10.1002/jclp

Lampropoulos, G. K., & Spengler, P. M. (2002). Introduction: Reprioritizing the role of science in a realistic version of the scientist-practitioner model. *Journal of Clinical Psychology, 58*(10), 1195-1197.

Lampropoulos, G. K., Spengler, P. M., Dixon, D. N., & Nicholas, D. R. (2002). How psychotherapy integration can complement the scientist-practitioner model. *Journal of Clinical Psychology, 58*(10), 1227-1240.

Latour, B., & Woolgar, S. (1979). *Laboratory life: The social construction of scientific facts*. Beverly Hills: Sage Publications.

Laudan, L. (1996). *Beyond positivism and relativism: Theory, method and evidence*. Boulder, Colorado: Westview Press.

Lawson, T. (1997). *Economics and reality*. London ; New York: Routledge.

Lewis, D. (1970). General semantics. *Synthese, 22*(1), 18-67.

Liddell, H. G., Scott, R., Jones, H. S., McKenzie, R., & Barber, E. A. (1968). *A Greek-English lexicon* (Rev. and augm. throughout ed.). Oxford: Clarendon Press.

Lilienfeld, S. O., Ritschel, L. A., Lynn, S. J., Brown, A. P., Cautin, R. L., & Latzman, R. D. (2013). The research-practice gap: bridging the schism between eating disorder researchers and practitioners. *International Journal of Eating Disorders, 46*(5), 386-394. doi:10.1002/eat.22090

Lilienfeld, S. O., Ritschel, L. A., Lynn, S. J., Cautin, R. L., & Latzman, R. D. (2013). Why many clinical psychologists are resistant to evidence-based practice: root causes and constructive remedies. *Clinical Psychological Review, 33*(7), 883-900. doi:10.1016/j.cpr.2012.09.008

Linge, D. E. (1977). Editor's introduction (D. E. Linge, Trans.). In H. G. Gadamer & D. E. Linge (Eds.), *Philosophical hermeneutics* (1st ed., pp. xi-lviii). Berkeley: University of California Press.

Lock, A., & Strong, T. (2010). *Social constructionism: sources and stirrings in theory and practice*. Cambridge, UK: Cambridge University Press.

Lopez, J., & Potter, G. (2005). *After postmodernism: An introduction to critical realism*. New York: Continuum.

Louw, J., & Foster, D. (1992). Intergroup relations and South African social psychology: Historical ties. *Canadian Psychology/Psychologie canadienne, 33*(3), 651.

Lowe, E. J. (2005). *Locke*. New York: Routledge.

Luce, R. D., & Tukey, J. W. (1964). Simultaneous conjoint measurement: A new type of fundamental measurement. *Journal of Mathematical Psychology, 1*, 1–27.

Lueger, R. J. (2002). Practice-informed research and research-informed psychotherapy. *Journal of Clinical Psychology, 58*(10), 1265-1276.

Mackay, N. (2003). Psychotherapy and the idea of meaning. *Theory & Psychology, 13*(3), 359-386.

Mackay, N. (2011). On some account of meaning and their problems. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 548-596). Boston: Brill.

Mackay, N., & Petocz, A. (2011a). *Realism and psychology: Collected essays*. Boston: Brill.

Mackay, N., & Petocz, A. (2011b). Realism and the state of theory in psychology. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 17-51). Boston: Brill.

Maddux, R. E., & Riso, L. P. (2007). Promoting the scientist–practitioner mindset in clinical training. *Journal of Contemporary Psychotherapy, 37*(4), 213-220. doi:10.1007/s10879-007-9056-y

Mäki, U. (2002). The dismal queen of the social sciences. In U. Mäki (Ed.), *Fact and fiction in economics: Models, realism and social construction* (pp. 3-34). Cambridge: Cambridge University Press.

Mäki, U. (2005a). Models are experiments, experiments are models. *Journal of Economic Methodology, 12*(2), 303-315. doi:10.1080/13501780500086255

Mäki, U. (2005b). Reglobalizing realism by going local, or (how) should our formulations of scientific realism be informed about the sciences? *Erkenntnis, 63*(2), 231-251. doi:10.1007/s10670-005-3227-6

Mäki, U. (2011a). Models and the locus of their truth. *Synthese, 180*(1), 47-63.

Mäki, U. (2011b). Scientific realism as a challenge to economics (and vice versa). *Journal of Economic Methodology, 18*(1), 1-12. doi:10.1080/1350178X.2011.553372

Mäki, U. (2012). Preface. In U. Mäki (Ed.), *Philosophy of economics* (Vol. 13, pp. xiii-xvii). Oxford: Elsevier.

Manicas, P. T. (1987). *A history and philosophy of the social sciences*. Oxford: Basil Blackwell.

Manicas, P. T. (1998). A realist social science. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & A. Norrie (Eds.), *Critical realism: Essential readings* (pp. 313-338). London: Routledge.

Maree, D. J. F. (1990). *Kritiese rasionalisme en teologie*. (Unpublished doctoral thesis), University of Pretoria.

Maree, D. J. F. (1995). *Cognition and consciousness: Developing a conceptual framework*. (Unpublished doctoral thesis), University of Pretoria.

Martin, J. (2003). Positivism, quantification and the phenomena of psychology. *Theory & Psychology, 13*(1), 33-38. doi:10.1177/0959354303013001759

Matthews, P. (2014). Existential quantifier. *The concise Oxford dictionary of linguistics.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199675128.001.0001/acref-9780199675128-e-1141

Mautner, T. (2000). *The Penguin dictionary of philosophy* (Rev. ed.). London: Penguin Books.

Maze, J. R. (1983). *The meaning of behaviour*. London: G. Allen & Unwin.

McArthur, D. (1998). Abstract and concrete. *Concise Oxford companion to the English language.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780192800619.001.0001/acref-9780192800619-e-10

McIlwain, D. (2007). Special section: Rezoning pleasure: Drives and affects in personality theory. *Theory & Psychology, 17*(4), 529-561. doi:10.1177/0959354307079303

McIlwain, D. (2011). Rezoning pleasure: Drives and affects in personality theory. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 755-801). Boston: Brill.

McLennan, G. (2001). 'Thus': Reflections on Loughborough relativism. *History of the Human Sciences, 14*(3), 85-101.

Meyers, R. G. (2006). *Understanding empiricism*. Chesham: Acumen.

Michell, J. (1993). The origins of the representational theory of measurement: Helmholtz, Hölder, and Russell. *Studies In History and Philosophy of Science Part A, 24*(2), 185–206.

Michell, J. (1994). Numbers as quantitative relations and the traditional theory of measurement. *The British Journal for the Philosophy of Science, 45*(2), 389–406.

Michell, J. (1997). Quantitative science and the definition of measurement in psychology. *British Journal of Psychology, 88*, 355-385.

Michell, J. (1999). *Measurement in psychology: Critical history of a methodological concept*. New York: Cambridge University Press.

Michell, J. (2000). Normal science, pathological science and psychometrics. *Theory & Psychology, 10*(5), 639-667. doi:10.1177/0959354300105004

Michell, J. (2001). Teaching and misteaching measurement in psychology. *Australian Psychologist, 36*(3), 211-218.

Michell, J. (2003a). Epistemology of measurement: The relevance of its history for quantification in the social sciences. *Social Science Information, 42*, 515-534.

Michell, J. (2003b). Pragmatism, positivism and the quantitative imperative. *Theory & Psychology, 13*(1), 45-52. doi:10.1177/0959354303013001761

Michell, J. (2003c). The quantitative imperative: Positivism, Naïve Realism and the place of qualitative methods in psychology. *Theory and Psychology, 13*, 5-31.

Michell, J. (2004). The place of qualitative research in psychology. *Qualitative Research in Psychology, 1*, 307-319. doi:10.1191/1478088704qp020oa

Michell, J. (2005). The logic of measurement: A realist overview. *Measurement, 38*(4), 285-294.

Michell, J. (2008a). Conjoint measurement and the Rasch paradox: A response to Kyngdon. *Theory & Psychology, 18*(1), 119-124. doi:10.1177/0959354307086926

Michell, J. (2008b). Is psychometrics pathological science? *Measurement: Interdisciplinary Research and Perspectives, 6*(1-2), 7-24. doi:10.1080/15366360802035489

Michell, J. (2009). The psychometricians' fallacy: Too clever by half? *British Journal of Mathematical and Statistical Psychology, 62*, 41–55.

Michell, J. (2011a). Normal science, pathological science and psychometrics. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 461-499). Boston: Brill.

Michell, J. (2011b). The place of qualitative research in psychology. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: collected essays* (pp. 678-698). Boston: Brill.

Michell, J. (2011c). Qualitative research meets the ghost of Pythagoras. *Theory & Psychology, 21*(2), 241-259. doi:10.1177/0959354310391351

Michell, J. (2012a). "The constantly recurring argument": Inferring quantity from order. *Theory & Psychology, 22*(3), 255-271. doi:10.1177/0959354311434656

Michell, J. (2012b). Observing mental processes. In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 5-32). New Brunswick: Transaction Publishers.

Michell, J. (2013). Constructs, inferences, and mental measurement. *New Ideas in Psychology, 31*(1), 13-21. doi:10.1016/j.newideapsych.2011.02.004

Moon. (2006). *Encyclopædia Britannica*: Encyclopædia Britannica 2006 Ultimate Reference Suite DVD.

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48-76. doi:10.1177/2345678906292462

Morgan, J. (2005). An alternative argument for transcendental realism based on an immanent critique of Kant. *Journal of Critical Realism, 4*(2), 435-460.

Morganti, M. (2016). Naturalism and realism in the philosophy of science. In K. J. Clark (Ed.), *The Blackwell companion to naturalism* (pp. 75-90). Hoboken: Wiley Blackwell.

Morick, H. (1980). The critique of contemporary empiricism. In H. Morick (Ed.), *Challenges to empiricism* (pp. 1-25). London: Methuen.

Natsoulas, T. (2012). A dislocation of consciousness. In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 127-155). New Brunswick, USA: Transaction Publishers.

Neuman, W. L. (2012). *Basics of social research: Qualitative and quantitative approaches* (3rd ed.). Boston: Pearson.

Nicholas, L. J. (1990). The response of South African professional psychology associations to apartheid. *Journal of the History of the Behavioral Sciences, 26*(1), 58-63.

Niiniluoto, I. (2014). Scientific progress as increasing verisimilitude. *Studies in History and Philosophy of Science, 46*, 73-77. doi:http://dx.doi.org/10.1016/j.shpsa.2014.02.002

Niiniluoto, I. (2015). Scientific progress. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/sum2015/entries/scientific-progress/

Norrie, A. (2004). Bhaskar, Adorno and the dialectics of modern freedom. *Journal of Critical Realism, 3*(1), 23-48. doi:10.1163/1572513041172722

O'Boyle, B., & McDonough, T. (2011). Critical realism, Marxism and the critique of neoclassical economics. *Capital & Class, 35*(1), 3-22. doi:10.1177/0309816810392963

O'Donnell, L., Kramar, R., & Dyball, M. (2013). Complementing a positivist approach to investment analysis with critical realism: Challenges and a way forward. *Qualitative Research in Financial Markets, 5*(1), 6-25.

Outhwaite, W. (1987). *New philosophies of social science: Realism, hermeneutics and critical theory*. New York: St. Martin's Press.

Overholser, J. C. (2007). The Boulder model in academia: Struggling to integrate the science and practice of psychology. *Journal of Contemporary Psychotherapy, 37*(4), 205-211. doi:10.1007/s10879-007-9055-z

Parker, I. (1999a). Against relativism in psychology, on balance. *History of the Human Sciences, 12*(4), 61-78. doi:10.1177/09526959922120496

Parker, I. (1999b). The quintessentially academic position. *History of the Human Sciences, 12*(4), 89-91.

Parker, I. (Ed.) (1998). *Social constructionism, discourse and realism*. London: Sage.

Passmore, J. (1962). John Anderson and Twentieth-century philosophy. In J. Anderson (Ed.), *Studies in Empirical Philosophy [A Machine readable transcription]* (pp. ix-xxvi). Sydney: Australian Digital Collections.

Pelling, H. (1960). *Modern Britain 1885-1955*. Edinburgh: Nelson.

Petocz, A. (1999). *Freud, psychoanalysis and symbolism*. Cambridge: Cambridge University Press.

Petocz, A. (2011). Science, meaning and the scientist-practitioner model of treatment. In N. Mackay & A. Petocz (Eds.), *Realism and psychology: Collected essays* (pp. 699-726). Boston: Brill.

Pilgrim, D. (2014). Some implications of critical realism for mental health research. *Social Theory & Health, 12*(1), 1-21. doi:10.1057/sth.2013.17

Pivčević, E. (1970). *Husserl and phenomenology*. London: Hutchinson.

Popper, K. R. (1978). Three worlds, The Tanner lecture on human values. Retrieved from http://tannerlectures.utah.edu/_documents/a-to-z/p/popper80.pdf

Popper, K. R. (2002). *Conjectures and refutations: The growth of scientific knowledge*. London: Routledge.

Popper, K. R. (2005). *The logic of scientific discovery*. London: Routledge.

Porpora, D. V. (2008). Sociology's causal confusion. In R. Groff (Ed.), *Revitalizing causality: Realism about causality in philosophy and social science* (pp. 195-204). London: Routledge.

Porpora, D. V. (2015). *Reconstructing sociology: The critical realist approach*. Cambridge, United Kingdom: Cambridge University Press.

Potter, J., Edwards, D., & Ashmore, M. T. (1999). Regulating criticism: Some comments on an argumentative complex. *History of the Human Sciences, 12*(4), 79–88.

Psillos, S. (2007). Past and contemporary perspectives on explanation. In T. A. F. Kuipers (Ed.), *General philosophy of science - focal issues* (pp. 97-173). Amsterdam: Elsevier.

Putnam, H. (1975). *Mathematics, matter, and method*. London: Cambridge University Press.

Puttonen, S., Ravaja, N., & Keltikangas-Järvinen, L. (2005). Cloninger's temperament dimensions and affective responses to different challenges. *Comprehensive Psychiatry, 46*(2), 128-134. doi:10.1016/j.comppsych.2004.07.023

Ratele, K. (2003). We black men. *International Journal of Intercultural Relations, 27*(2), 237-249. doi:10.1016/s0147-1767(02)00094-9

Ravenscroft, I. (2005). *Philosophy of mind: A beginner's guide*. Oxford: Oxford University Press.

Ravenscroft, I. (2010, 2012). Folk psychology as a theory. *The Stanford encyclopedia of philosophy.* Fall 2010 Edition. Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/fall2010/entries/folkpsych-theory/

Recognitive. (2015). *Oxford English dictionary (OED) online.* Retrieved from http://0-www.oed.com.innopac.up.ac.za/view/Entry/304490?redirectedFrom=adience

Representationalism. (2015). *Oxford English dictionary (OED) online.* Retrieved from http://0-www.oed.com.innopac.up.ac.za/view/Entry/274786

Representationism. (2015). *Oxford English dictionary (OED) online.* Retrieved from http://0-www.oed.com.innopac.up.ac.za/view/Entry/163001?redirectedFrom=representationism

Rescher, N. (1995). Idealism. In R. Audi (Ed.), *The Cambridge dictionary of philosophy* (pp. 355-357). Cambridge: Cambridge University Press.

Ricœur, P. (1981). *Hermeneutics and the human sciences: Essays on language, action, and interpretation* (J. B. Thompson, Trans.). New York: Cambridge University Press.

Roberts, J. M. (1999). Marxism and critical realism: The same, similar, or just plain different? *Capital & Class, 23*, 21-49. doi:10.1177/030981689906800104

Ron, A. (2002). Regression analysis and the philosophy of social science: A critical realist view. *Journal of Critical Realism, 1*(November), 119-142.

Rorty, R. (1979). *Philosophy and the mirror of nature*. Princeton, N.J.: Princeton University Press.

Rosen, G. (2012, 2012). Abstract objects. *The Stanford encyclopedia of philosophy.* Spring 2012. Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/spr2012/entries/abstract-objects/

Rosenberg, J. F. (2005). *Accessing Kant: A relaxed introduction to the Critique of Pure Reason*. Oxford: Clarendon Press.

Rossouw, P. J. (2013). The neuroscience of talking therapies: Implications for therapeutic practice. *The Australian Journal of Counselling Psychology, 13*(1), 40-48.

Saussure, F. d. (1959). *Course in general linguistics*. New York: Philosophical Library.

Sayer, A. (1997). Essentialism, social constructionism, and beyond. *The Sociological Review, 45*(3), 453-487.

Sayer, A. (1998). Abstraction. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & A. Norrie (Eds.), *Critical Realism: Essential readings* (pp. 120-143). London: Routledge.

Sayer, A. (2004). Critical realism: The difference it makes. *Sociology, 38*(4), 856-857.

Schaffer, J. (2014). The metaphysics of causation. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/sum2014/entries/causation-metaphysics/

Schlick, M. (1981a). Facts and propositions. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 196-201). Oxford: Basil Blackwell.

Schlick, M. (1981b). On the foundation of knowledge. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 178-196). Oxford: Basil Blackwell.

Schlick, M. (1981c). Positivism and realism. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 83-110). Oxford: Basil Blackwell.

Schlick, M. (1981d). Structure and content. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 131-149). Oxford: Basil Blackwell.

Scott, J., & Marshall, G. (2009). Positivism. *A dictionary of sociology.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/10.1093/acref/9780199533008.001.0001/acref-9780199533008-e-1761

Seo, M. (2009). *From critical realism to meta-reality: Roy Bhaskar's philosophical evolution from West to East*. Unpublished doctoral dissertation. University at Buffalo, State University of New York. Buffalo, NY.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Shaw, R. (2012). Ecological realism as a reaction to new realism: Holt's legacy to Gibson. In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 157-190). New Brunswick, USA: Transaction Publishers.

Siever, L. J., & Weinstein, L. N. (2009). The neurobiology of personality disorders: implications for psychoanalysis. *Journal of the American Psychoanalytic Association, 57*(2), 361-398. doi:10.1177/0003065109333502

Silverman, D. (2001). *Interpreting qualitative data: Methods for analyzing talk, text and interaction* (2 ed.). London: SAGE Publications.

Solomon, R. (2005). Subjectivity. *The Oxford companion to philosophy.* Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199264797.001.0001/acref-9780199264797-e-2440

Speaks, J. (2014). Theories of meaning. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/fall2014/entries/meaning/

Spiegelberg, H., & Schuhmann, K. (1982). *The phenomenological movement: a historical introduction* (3 ed.). The Hague: Nijhoff.

Sprigge, T. L. S. (2005). Idealism. In E. Craig (Ed.), *The Shorter Routledge Encyclopedia of Philosophy* (pp. 429-434). London: Routledge.

Sternberg, R. J. (1998). *In search of the human mind* (2nd ed.). Fort Worth: Harcourt Brace College Publishers.

Stevens, G. (2003). Academic representations of race and racism in psychology: Knowledge production, historical context and dialectics in transitional South Africa. *International Journal of International Relations,, 27*, 189-207.

Stevens, S. S. (1946). On the theory of scales of measurement. *Science, 103*(2684), 677-680. doi:10.1126/science.103.2684.677

Stoléru, S. (2014). Reading the Freudian theory of sexual drives from a functional neuroimaging perspective. *Frontiers in human neuroscience, 8*, 1-15. doi:10.3389/fnhum.2014.00157

Stoljar, D. (2009). Physicalism. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/fall2009/entries/physicalism/

Stone, G. L. (2006). The scientist-practitioner in context. *Counselling Psychology Quarterly, 19*(3), 305-312. doi:10.1080/09515070600960522

Stricker, G. (2002). What is a scientist-practitioner anyway? *Journal of Clinical Psychology, 58*(10), 1277-1283.

Swoyer, C., & Orilia, F. (2014). Properties. *The Stanford encyclopedia of philosophy.* Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/fall2014/entries/properties/

Taylor, C. (1964). *The explanation of behaviour*. London: Routledge and Kegan Paul.

Taylor, E. (2012). William James's radical empiricism: Did E.B. Holt get it right? In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 105-126). New Brunswick, USA: Transaction Publishers.

Terre Blanche, M. J., Durrheim, K., & Painter, D. (2006). *Research in practice: Applied methods for the social sciences* (2nd ed.). Cape Town: UCT Press.

Tonneau, F. (2012). Holt's realism: New reasons for behavior analysis. In E. P. Charles (Ed.), *A new look at new realism: The psychology and philosophy of E.B. Holt* (pp. 34-55). New Brunswick: Transaction Publishers.

Trull, T. J., Useda, J. D., Costa Jr, P. T., & McCrae, R. R. (1995). Comparison of the MMPI-2 Personality Psychopathology Five (PSY-5), the NEO-PI, and the NEO-PIR. *Psychological Assessment, 7*(4), 508-516.

Van Fraassen, B. C. (1980). *The scientific image*. Oxford: Clarendon.

Vespia, K. M. (2006). Integrating professional identities: Counselling psychologist, scientist-practitioner and undergraduate educator. *Counselling Psychology Quarterly, 19*(3), 265-280. doi:10.1080/09515070600960555

Vespia, K. M., & Sauer, E. M. (2006). Defining characteristic or unrealistic ideal: Historical and contemporary perspectives on scientist-practitioner training in counselling psychology. *Counselling Psychology Quarterly, 19*(3), 229-251. doi:10.1080/09515070600960449

Vienna Circle. (1973). The scientific conception of the world. In O. Neurath, R. S. Cohen, P. Foulkes, & M. Neurath (Eds.), *Empiricism and sociology* (pp. 299-319). Dordrecht & Boston: Reidel.

Vinden, P. G. (1999). Gathering up the fragments after positivism: Can Ratner make us whole again? *Culture & Psychology, 5*(2), 223-238.

Viskovatoff, A. (2002). Critical realism and Kantian transcendental arguments. *Cambridge Journal of Economics, 26*(6), 697-708. doi:10.1093/cje/26.6.697

Von Thünen, J. H., Wartenberg, C. M., & Hall, P. (1966). *Von Thünen's isolated state: An English edition of Der Isolierte Staat*. Oxford: Pergamon.

Waismann, F. (1981). Meaning and verification. In O. Hanfling (Ed.), *Essential readings in logical positivism* (pp. 45-55). Oxford: Basil Blackwell.

Wartenberg, T. E. (1992). Reason and the practice of science. In P. Guyer (Ed.), *The Cambridge companion to Kant* (pp. 228-248). Cambridge: Cambridge University Press.

Weiten, W., & Halpern, D. F. (2004). *Psychology: Themes and variations* (6th ed.). Belmont, CA: Thomson/Wadsworth.

Westphal, K. R. (2004). *Kant's transcendental proof of realism*. Cambridge: Cambridge University Press.

White, G. (2013). Medieval theories of causation. *The Stanford encyclopedia of philosophy*. Retrieved from http://0-plato.stanford.edu.innopac.up.ac.za/archives/fall2013/entries/causation-medieval/

Whitley, B. E. (2002). *Principles of research in behavioral science* (2nd ed.). New York: McGraw-Hill.

Williamson, T. (2005). Realism and anti-realism. *The Oxford companion to philosophy*. Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780199264797.001.0001/acref-9780199264797-e-2140.

Winch, P. G. (1958). *The idea of a social science and its relation to philosophy*. London: Routledge & Kegan Paul.

Winkler, K. (2005). Berkeley and the doctrine of signs. In K. Winkler (Ed.), *The Cambridge companion to Berkeley* (pp. 125-165). Cambridge: Cambridge University Press.

Winkler, K. P. (2010). Kant, the empiricists, and the enterprise of deduction. In P. Guyer (Ed.), *The Cambridge companion to Kant's Critique of pure reason* (pp. 41-72). Cambridge: Cambridge University Press.

Wittgenstein, L. (2005). *Philosophical investigations: the German text, with a revised English translation* (G. E. M. Anscombe, Trans. 3rd ed.). Malden, MA,: Blackwell.

Woodfield, A. (1998). Teleology. *Routledge encyclopedia of philosophy*. Retrieved from https://0-www.rep.routledge.com.innopac.up.ac.za/articles/teleology/v-1/

Xu, F., Spelke, E. S., & Goddard, S. (2005). Number sense in human infants. *Developmental Science, 8*(1), 88-101. doi:10.1111/j.1467-7687.2005.00395.x

Zahavi, D. (2009). Subjectivity. *The Oxford companion to consciousness*. Retrieved from http://0-www.oxfordreference.com.innopac.up.ac.za/view/10.1093/acref/9780198569510.001.0001/acref-9780198569510-e-317

Zietkiewicz, E., & Long, C. (1999). Speaking for a change: Strategies for transgressive praxis. *Feminism & Psychology, 9*(2), 142-151.

Zuckerman, M., & Cloninger, C. R. (1996). Relationships between Cloninger's, Zuckerman's, and Eysenck's dimensions of personality. *Personality and Individual Differences, 21*(2), 283-285.