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Socially constructed AND painfully real:

The potential of critical realism to underlabour for environmental justice
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Socially constructed AND painfully real. The potential of critical realism to underlabour for environmental justice.

Nature and Society Seminar, University of Johannesburg, 16 October 2013, Dr Victor Munnik, Nature and Society Cluster, SWOP Institute, Wits.

"…clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge"

Roy Bhaskar, critical realist philosopher's describing the task of "underlabouring"

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1. Introduction

Two of the biggest tasks for the environmental justice movement are to:

1. Directly fight pollution and
2. To imagine and build a different society in which environmental injustices do not occur.

In reverse order, these tasks respond to the challenges highlighted in the title of this talk. The first task – directly fighting pollution - requires meticulous attention to reality, including the reality of pollution and its effects. It raises questions about knowledge: the local knowledge of context, immediate experience of pollution on people's own bodies, on livestock, crops and living environments, and the mutually constructed interpretations of it, knowledge of the pollution reflected in the public media, knowledge brought in by regulators, by scientists, forensic knowledge required by lawyers on both sides of the divide, knowledge of the pollution held by environmental managers, and released – altered, watered down, or revealing – and the dramatic actions of whistleblowers in crossing these boundaries. The contestation here is about whether the pollution is real, and can be proven to be real.

The second task requires engaging with, unpacking and transforming the ways we have constructed our societies and our beliefs about them and the natural world. In the words of EJ theorist Devon Pena:

> "Environmental Justice discourses challenged environmental thinkers to reconsider the meaning of basic concepts like nature, environment, ecosystem, wilderness and biodiversity; they forced many to consider the role of race, ethnicity, national origin, class, gender, and culture in the framing of environmental history, environmental ethics, and ecological politics… EJ discourses recentered the problematic of ecological politics in the constellation of cultural differences that construct variant epistemologies of nature…" (2005: 131).

Activists, as intellectuals, engage with social constructions and remake them. The task is to imagine and then bring about a different world – in which environmental justice is at the centre. How? A first step is seeing the present as the result of a contingent history. Michel Foucault has expressed this in a broader context:

> "... I would say also, about the work of the intellectual, that it is fruitful in a certain way to describe that-which-is by making it appear as something that might not be, or that it might not be as it is… recourse to history … is meaningful to the extent that history serves to show how that-which-is has not always been, i.e. that the things which seem most evident to us are always formed in the confluence of encounters and chances, during the course of a precarious and fragile history. … It means that they reside on a base of human practice and human history; and that since these things have been made, they can be unmade, as long as we know how they were made "(Foucault, 1990: 36).

For some, the idea of describing an intransitive reality (a reality that is so regardless of how we think of it) and the idea of socially constructed knowledges of that reality are impossible to think together. I will argue that critical realism provides an ideal theoretical approach to do both tasks together.

First, I will introduce the empirical material for this case study – namely the pollution struggle in Steel Valley. In other work, I have looked at this material from an activist point of view (Hallowes and Munnik, 2006), and am involved in an effort to make it available in a popular form. But this paper is aimed at theoretical considerations of studying and dealing with pollution as an environmental injustice, and so I will trace the theoretical choices I made in working with this material in my Ph D (Munnik, 2013). Second, I will relate my encounter with critical realism, and give an introduction and overview based on this. I will then start to build an argument that critical realism contains specific intellectual resources that can be of great use to the environmental justice movement.

1.1 The Pollution of Steel Valley

The Steel Valley case concerns the externalization of pollution from a steel factory in Vanderbijlpark onto a neighbouring community of smallholders, their workers and tenants, evidenced since 1961 but likely since 1952, when the factory started operation. Steel making is a highly polluting process, via air and water. Up to 1994, the attempts by some of the around 3000 residents of Steel Valley to resist the pollution had no impact. Their greatest "successes" were that complaining individual smallholders received alternative water supplies or were bought out, but in return had to sign confidentiality agreements binding them not to discuss the pollution.

Since 1994, the new constitution gave all South Africans the right to live an environment not harmful to their health and wellbeing. Residents of the community which by now was in the first phases of racial integration – but still deeply marked by racial and class segmentation - used their control over the newly elected local government (the Western Gauteng Services Council) and its resources to challenge the pollution. They involved Iscor in a pollution discussion forum, which was later upgraded into a more official forum by the Department of Water Affairs. A cost-benefit analysis comparing between a buy-out and remediation option, predictably chose the buy-out option. The smallholdings were bought out, at prices that many smallholders were unhappy with. The houses were bulldozed and the area turned into a fake wilderness serving today as a buffer zone for the steel factory. Efforts to have the area declared a disaster zone, to resettle the community as a whole in another area, to receive compensation for losses due to the pollution, and to establish a trust fund to deal with future health problems, were all unsuccessful. Through two court cases, affected residents challenged Iscor's strategies. The first was

folded into the buy-out, after a settlement out of court, and the second stopped when funds and energy ran out. In a second phase of resistance to the pollution, the scattered residents were absorbed into worldwide environmental justice networks, teamed up with other communities in the Vaal, and later formed an international watchdog network monitoring the activities of the steel factory's globalized owner, ArcelorMittal.

1.2 Discursive power

My attention was drawn to this case by the seeming unreasonableness of the events, frequently expressed by residents and activists in the shape of two questions: how could the management of the steel factory claim that there was no pollution, and how could they escape the consequences of this pollution? It seemed that something – some condition or mechanism – made the environmental right in the constitution hollow, made the pollution not real, and made the expectation of consequences, such as compensation for the pollution, unreasonable.

I observed that although the pollution and the subsequent destruction of Steel Valley as a residential area were both shockingly real, almost all the "action" in the Steel Valley drama was discursive. It took place through words, ideas, forum discussions, more words in court cases, official letters from government, evidence of pollution and arguments about its unprovability. It seemed to me that there was a discursive power at work, a power that could be wielded to achieve these unreasonable outcomes. To describe this discursive power I turned for theoretical tools first to the field of discourse analysis.

Discourse analysis is the broad field of study of the construction of meaning. It brings together, and is nourished by, a number of different traditions or subdisciplines. "Ethnomethodology, conversation analysis, sociology of scientific knowledge, poststructuralism, communication, linguistic philosophy" are the subdisciplines that are specifically identified as approaches closely related to discourse analysis applied in social psychology, in Wood and Kroger's *Doing Discourse Analysis* (2000: 19). In a two volume overview edited by Theun van Dijk (1997), discourse analysis is understood to include, amongst others, rhetoric, narrative analysis, argumentation, social cognition, discourse semiotics, semantics and grammar, and the analysis of organisational and institutional discourse.

The approaches listed above vary immensely in scale. At the microanalysis end of the spectrum one finds an interest in individual meaning making (Riesman, 1993) and the art of conversation, for example turn taking and face saving conventions (Wood and Kroger, 2000). There are critical discourse studies on the organisational or institutional level (Mumby and Clair, 1997; Berkenkotter, Huckin and Ackerman, 1991) as well as macro-analytical approaches which connect discourse analysis to the study of ideology (Fairclough, 1995; 1989; Thompson 1990; 1984).

I chose the work of Fairclough (2009; 1995; 1992; 1989), but instead of undertaking the more usual linguistic textual analyses, focused in on the more rarely used aspects of conditions of possibility for discursive play in his approach, to explain the imbalance of discursive power that allowed the steel factory to escape liability for its pollution. The definition of discursive power for the purposes of this study was: "*the ongoing construction and deployment of meaning, which enables and constrains social*

actors to describe and define a situation, its objects, the rules of speaking about them and developing ways of acting upon them" (Munnik, 2013: 31).

This work ended in a description of discursive play in different discursive arenas – courts, public opinion, administration (government) and personal narratives in the community – as components of the process that led to the outcome: the steel factory's successful externalization of the pollution.

1.3 Discursive and material power

The analysis so far did not give enough weight to the material aspects of pollution. I argued that:

> "Discursive power cannot be understood in isolation from material power (Harvey, 1996; Fairclough 1995, 1989). There is also a close connection and interpenetration between discursive power, aimed at creating or maintaining consent, and directly coercive power. If consent is the velvet glove, it has no shape and no place without the iron fist underneath. It is material power that shapes the platforms, networks and resource bases of discursive flows, and can interrupt them. Discursive power exists in a close relationship with material power. It both enables and reflects material power (Fairclough, 1995; 1989). The exercise of discursive power also requires material power, for example printing presses and broadcasting equipment that enable public opinion (Herman and Chomsky, 1994)."

But how to bring this into the analysis? Fairclough claims Foucault, Habermas and Gramsci as intellectual ancestors. I used the work of Habermas to describe one of the most important arenas was the public sphere, in which battles for legitimation took place (Habermas, 1996). This allowed me to take the discussion to the new public and political "playing field" in South Africa… a politics of hegemony which required, in the new democracy, the consent of the ruled (Gramsci, 1957; 1971; Marais, 2001; Greenstein, 2003). The politics of hegemony would suggest that the new state would defend its citizens from pollution (Weale, 1992), so why did this not happen? The short answer is that the tax-dependent state balances demands for the maintenance of hegemony, with demands to enable capital's projects of accumulation (Jessop, 1990; Yudelman, 1984). The state did, after much pressure, tighten up regulation and force ecological modernization, but did not defend citizens' rights to information, due process, compensation and a health fund for future health problems, or the cleaning up of the toxic pollution legacy.

It was in the work of Michel Foucault and his followers that I found a description that contained both discursive and material power in terms of a "pollution dispositive" (Foucault, 1980b). Foucault understands by a dispositive:

> "… a sort of – shall we say – formation which has as its major function at a given historical moment that of responding to an urgent need (urgence). The (dispositive) thus has a dominant strategic function". It is "… a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as

the unsaid. The (dispositive) itself is the system of relations that can be established between these elements" (Foucault, 1980b: 194).

For the study, the concept of pollution dispositives was developed: *pollution dispositives actively transform landscapes, shape institutions and create and deploy knowledges in order to legitimate the continued externalization of pollution costs.* It is precisely these practices of legitimation of pollution that has drawn the interest of Environmental Justice (EJ) activists, researchers and the fenceline communities affected by it.

Siegfried Jaeger, a critical discourse analyst who developed Foucault's work to deal more explicitly with non-discursive elements of power, describes dispositives as strategies that respond to challenges – usually for an elite or aspiring elite – in the political economy (Jaeger, 2001). This dispositive or complex is heterogeneous since it brings together discursive practices, non-discursive practices and "material manifestations", (2001: 56). Jaeger argues that knowledge "flows into" raw material to give it shapes that suit those whose strategy it serves (2001: 60) – for example the "conservation landscape" that replaced the Steel Valley community. The concept of the dispositive reflects an underlying idea that human activity shapes society as well as material reality – in a process of ongoing change as well as domination, and struggles for domination. Jaeger described dispositives as:

> "circles rotating in history with three central transit points: 1. discursive practices in which primarily knowledge is transported, 2. actions as non-discursive practices in which, however knowledge is transported, which are preceded by knowledge and/or constantly accompanied by knowledge, 3. manifestations or materializations which represent materializations of discursive practices through non-discursive practices, whereby the existence of manifestations ('objects') only survives through discursive and non-discursive practices…" (2001: 56).

1.4 The Minerals Energy Complex

Clearly, a further explanation for the steel maker's discursive power lay in its history. This history was can be understood as part of a Minerals Energy Complex (Fine and Rustomjee, 1996), which had been taken up by other analysts to mean a central driving force in our political economy. It offered an explanation – or could be worked into an explanation – of the failure of government to respond to Steel Valley residents, and actively defend, enforce and realize their environmental right, section 24. This was a political economy explanation or history spanning around 120 years.

Inspired by the analysis of the formulation of The Native Question in South Africa by Ashforth (1990), which also substantively dealt with similar historical material (predating my case study) I analysed the MEC as a pollution dispositive, that produced and legitimized pollution, and that it had developed its pollution legitimizing aspect through the challenge of the new South Africa's rights based constitution, and the new spaces and opportunities it provided as part of the new South African politics of hegemony – as shown in the Steel Valley case. I concluded that there are likely to be similar environmental justice

challenges and struggles for all the communities on the fencelines of the MEC, in mining and industry, and that these communities and activists within them and supporting them were likely to face similar tactics and strategies from the polluters – foremost among them, a multifaceted politics of knowledge, which has its conditions of possibility in the discourses and practices of environmental management, sustainable development, the doctrine of limited liability combined with the corporate legal personality, and most importantly, the growth (and development) discourse.

1.5 Mechanisms of environmental injustice

To bring the analysis closer to the Environmental Justice tradition, I linked the externalization of pollution to two supportive moves: exclusion from decision making – despite the changes as the result of the transition - and enclosure of resources (both intellectual, through a politics of knowledge with enabled exclusion from decision making which in turn goes back to thoroughly undemocratic character of economic decision making in democracies (Jessop, 1990) – and physical – through a buy-out and literal enclosing (fencing) process of the area of Steel Valley. In environmental justice analyses, this triad of "mechanisms of imposing environmental injustice", had been developed in a series of reports for the NGO groundWork (Hallowes and Munnik, 2006; 2007; Butler and Hallowes, 2002). The externalization of pollution was understood as a type of theft, as wealth was transferred from the factory's neighbours as they carried the costs of damage to health, livestock, crops, property and environment, while the factory saved on pollution control costs. This was enabled by a system of decision making from which the polluted were excluded, through a variety of means ranging from the politics of knowledge (hiding information, making information inaccessible) to unequal power of legal and scientific discursive strategies. This unequal power was, in return, the result of unequal material and financial power in the political economy – in short, control over resources of production and of legitimation, fundamental to a capitalist economy.

I finished my Ph D and handed it in. Then I encountered critical realism.

2. Encounter with critical realism

In applying critical realism, a nagging question is how much critical realism one should know to be able to use it? I therefore start with an account of my own exposure to critical realism, a sort of autobiographical reception study.

My first encounter was with the 7-scale lamination of reality (see below for an application) in a critical realist volume on dealing with climate change (Bhaskar et al, 2010). I was part of a research team that applied this to a project in creating space for social sciences in the South African water sector (Munnik and Burt, 2013), as a framework for interdisciplinary work – locating different knowledges (theories and methodologies enabling "social" research) in existing work, as well as gaps in asking the social questions. Seeing how explanations work at different levels – from the sub-personal to the global - how analyses at one level may contradict those at another, how gaps in analysis may be identified, how different knowledges do different types of work to understand a problem and what co-operation (e.g. triangulation) is needed between different knowledges, can liberate us from the limiting insights of a specific discipline and encourage us into an interdisciplinary or even transdisciplinary space. It can show how, for example, psychology with its focus on the individual and its disregard for social relationships,

ethnography for small group analyses and micro-politics, analyses of social systems, the grand theoretical analysis of political economy and the long lasting presence of geo-historical trajectories like colonialism, all illuminate a case study on different levels. I recognized in critical realism a potential to harmonise the very different strands of theory and world views that I had drawn into my Ph D.

None of us can lightly make an investment in a new theoretical paradigm. It is not only costly in terms of time, but entails a commitment to a philosophical and political stance – and it chooses the crowd you will hang with (in both senses of the word). I embraced critical realism from a ground of trust and solidarity based on an appreciation of Bhaskar's emancipatory project. But I was also looking at critical realism as a process of intellectual change and competition for attention space (Collins, 1998).

I was struck by the sheer ambition and comprehensiveness of the critical realist project (a revision of Western thinking since the ancient Greeks). I was also awed by the extent of a dense, 40 year literature. Going through a number of critical realism websites, I saw that critical realism was a growing movement. It echoed in many respects the description by Collins of the "great intellectual work… which creates a large space on which followers can work"… (1998: 32). In the case of Bhaskar or critical realism, this is a movement complete with a centre for critical realism, a membership base, regular conferences, a publisher's dedicated series of books, and a trajectory of work in one field after another.

Critical Realism emerged at a historically specific moment, when there were many signs that the ground was shifting:

> "… (at) the end of the post-war boom, more than a whiff of revolt and even revolution and the rebirth of a free Marxist current in the new eclecticism of a still malaised social science. The multi-tiered stratification of the natural sciences was a palpable reality and slogans of the type 'If you can split/spray it/them, it/they exist/s' abounded. Relativity theory, quantum mechanics, the liberation of the colonies, the threat of a nuclear holocaust and looming ecological crisis rendered conventional assumptions obsolete. The time was ripe for ontology; and as the seventies made way for the eighties and the events of 1989, for a new account of change, especially in the context of the collapse of communism, the poverty of most materialist dialectical philosophy and the monstrous inequities of the strife-torn, crisis-ridden chaotic new world order that Bush, Benetton and Hayek were in the process of ushering in. It is in this milieu that dialectical critical realism came into being. (Bhaskar, 1993: 280).

Critical realism started out with an interest in change: "… critical realism actually began around 1968 and was initiated really with a concern with problems of modernization and underdevelopment… "(Bhaskar (2002: 123). Bhaskar found that his efforts to comment on these were obstructed by a philosophical hegemony, starting with Descartes, developed by Hume and Kant, that said "there could be no argument or discussion about the world, about how the world was in itself" (ibid). So Bhaskar had to first "set up the philosophical respectability of talking about the world in itself" (2002: 124). He attacked the idea of "constant conjunctions of events" as the basis of science, investigated the preconditions of science and concluded that "reality is stratified, structured, and also that the surface of reality was

differentiated" … identifies in his own work a method: identify an incompleteness in … brought back ontology.

The engagement with positivist science was a first step in a historical trajectory that CR undertook, resulting in a "menu" from which those who wish to work with it can choose specific phases or tools created in these phases. The second phase engaged the social science (more about this later), to overcome the many classical binaries in it: "structure/agency, individual/collective (or whole), meaning/behaviour; reason/cause, mind/body, fact/value and theory/practice." (Bhaskar, 2013: 8). A third, dialectical phase (see below) gave attention to absence, metacritique and ethics, which was then followed by a "spiritual turn".

Beyond Bhaskar, the development of CR is driven by (1) critiques from an inner theoretical core that refines, enriches and invigorates Bhaskar's work as it explicates it, and (2) an advancing edge of applied critical realism.

I liked critical realism because it was emancipatory and politically aware and involved, intelligent and supportive, with a sense of solidarity against oppression, coercion and forbidding. It was also open: it encouraged questioning and further development. It looked useful to my own projects because it seemed comprehensive and integrating in the light of its revision of Western philosophical tradition that underpins social theory and methodology.

Through CR, an authority-based, hierarchical, limited access, reductionist scientific practice which is often disabling and dismissive of environmental activists, could be addressed. This is because of the underlying and driving emancipatory intention – towards a freely flourishing society, where the flourishing of one is a precondition for the flourishing of all, as Bhaskar puts it – that flows throughout Bhaskar's work. It reflects a solidarity which is a crucial underlying precondition of good environmental justice work.

I also liked the consistency of the basic question: "what the world must be like for a variety of things to be possible in it?" (Norrie, 2010: 42), and the insistence that knowledge flows from and is tested from practice, and becomes alienated from reality ("irrealist") when it circulates in an ivory tower environment. Critical realist methodologist Sayer (1993: 13) says "… knowledge is primarily gained through activity both in attempting to change our environment (through labour or work) and through interaction with other people, using shared resources, in particular a common language". Bhaskar has also introduced a useful distinction between power$_1$ (creative, self-expressive power in solidarity, closely related to Marx's concept of species being) and power $_2$ (coercive, oppressive power), which spoke directly to one of my crucial concerns in my Ph D to open a space for activism AND critique in my Ph D.

In the next section, I introduce specific ideas animating the first three phases of CR, and discuss their potential for environmental justice studies, using the Steel Valley case study introduced in the first section.

3. Argument: how critical realism can help Environmental Justice analysis

3.1 Dealing with scientific reductionism

As an emancipatory project, CR underlabours for social and natural science theories and methodologies by clearing up obstacles in thought that distort thinking, especially those that alienate intellectual work from practice. Important to EJ are two types of current obstacles: reductionist science and paralyzing or irreal postmodernism (that is, not all of postmodernism).

CR uses the critique of conditions of possibility (a form of immanent critique, which engages with some aspect inherent to a position to engage critically with that position), in which it compares a theory or a statement with the preconditions of it being said: for instance, a claim to truth in a statement presupposes that statements can be judged as true or false. These conditions of possibility are not only logical, but also material, institutional etc.

In engaging with positivism or scientific reductionism, Bhaskar argued from two points:

(1) Natural systems, both ecosystems and social systems (that actually form single, fused systems because of constant interaction), cannot adequately be described as 1.1 the aggregation of atomistic events, for example, be reducible to chemistry and 1.2 laws cannot be derived from constant conjunctures of events – these conjunctures are merely indications that may point to an underlying generative mechanism.
(2) Because the world consists largely of open systems, in which the effects of generative systems, although these mechanisms are real, may be absent or not visible, e.g. overridden by other mechanisms. Bhaskar argues that we have to distinguish the real (mechanisms that are causes), from the actual (that which happens) and also from the empirical (that which we encounter).

The result of this engagement for EJ is to disarm scientific reductionism, which is often used by polluters - in conjunction with the authority of natural science - to dismiss citizens' claims. This was part of, although not the whole, of the politics of knowledge in the Steel Valley struggle. CR's approach of depth ontology is the opposite of reductionism, in thought and in practice.

Bhaskar's engagement with natural science is important for a citizens' poilitics of knowledge around pollution, and the possibility of citizens' monitoring – to be able to understand the pollution that is being externalized, to be able to describe it, and to give it forensic force in administrative and legal arenas, and persuasive force in public arenas.

CR engagement here is further built on the fundamental distinction between ontology (what is real?) and epistemology (how do we know about it?). The two terms are related, because our knowledge about reality describes that for us, but the connection is not symmetrical – what we know about reality does not constitute reality. It is a separate question how we change reality through our knowledge (anthropogenic change and its consequences) that does not affect this relationship.

3.2 Positions and practices

Bhaskar is very clear that social and natural systems can be studied and understood in the same way (that is, as open systems, as ontology and epistemology as separate levels). Still, social structures are different in the respect that what we study is always already in the form of meaning – if not exactly theorized (although people have explanatory systems for their own behaviour, personalities, social systems and practices that can be partly theorized as theories, in one form or another, circulate popularly and intermingle with other modes of understanding). People also have agency, and an important part of studying the social is understanding the relationships between structure and agency… or for CR, positions – given over a longer time in social structure – and the individuals who fill, preserve and alter them through their practices (Archer, 1998).

This level is important for the environmental justice movement's concern with social dynamics in struggle: for example the arenas (of law, administration, the public sphere, local reality etc) in which these struggles take place, and would include issues such as the rules and behaviour of the regulator, environmental managers, activists and activist organisations including networks, fenceline communities, companies etc.

Here it is immediately practically useful, in terms of method, to use the laminated reality (explained below) which allows an unpacking of different levels from biography through institutions to global discourses like sustainable development and geo-historical trajectories like colonialism (Bhaskar 2010).

In South Africa we have the added perspective of transition, a special opportunity because "it might be conjectured that in periods of transition or crisis generative structures, previously opaque, become more visible to agents. (Bhaskar, 1998: 227). CR also provides a strong relational principle linking the pollution, the polluter, the polluted and the mediating agents, particularly the regulator but also the public in a constellation or system that mutually influence each other.

3.3 Absence and change: dialectical critical realism

EJ is interested in imaging a new world, a world that we do not yet live in. For this undertaking, Bhaskar provides an array of useful concepts/positions/techniques in his dialectical turn (Bhaskar 1993; 1994; Norrie, 2010).

Bhaskar identifies a fundamental flaw in Western philosophy that avoids the discussion of substantive social change, in favour of a static, analytical view of difference, from the Greeks up to the postmodernists, that preserves the status quo. The one great exception is Marx, who, according to Bhaskar, never found the time to theorise this part of his work (Bhaskar, 1993). Identifying and dealing with this long run fault line, is useful in envisioning and creating a radically different, social just and environmentally respectful and sustainable relationship between societies and nature – something that Bhaskar refers to as "practical utopianism".

Bhaskar argues that this fault line has provided the ground for endless – and hopeless – discussions of a series of binaries (Bhaskar calls them "duals") such as agent and structure. Bhaskar's approach is to work

with the ground on which these duals are situated, rather than choosing one side and neglecting the other.

The presence of the past in the present, and the future is crucial for EJ. CR describes these as "geo-historical trajectories", the big movements, specifically tied to time and space (he calls them "rhythmic" and "tensed" as well as spatialised). These are real histories and how they are analysed, which levels (of the laminated reality mentioned/discussed earlier) are influential in terms of generative mechanisms, is a contingent question.

Critical realism pays attention to the history, especially its the material aspects as "geohistorical trajectories". Its dialectic is hugely indebted to Marxism, and this is acknowledged. It foresees a massive redistribution of resources, and a working through of conflicts to arrive at the "freely flourishing society". This is an ongoing human ethical project towards a society" (reminiscent of Marx's classless society), as echoed in the approach "the flourishing of all depends on the flourishing of all", and gives ethics a universalizing aspect (applying to all people). It also analyses how this underlying tendency – which it derives through analysis of implications from universal behaviours in human society, like the situation of giving advice (and closely related to Habermas analysis of the ideal speech situation, but not idealized as Habermas does) - is constrained and enabled, in a real world of social structures. Marxist critical realists have baulked at Bhaskar's decentering of class relations to "master-slave relations", a more inclusive concept of oppression (Norrie, 2010).

Metacritique

Metacritique enables us to evaluate philosophy and discourse – representations of that reality – against reality. Ideas and theories – and the knowledge they produce – are related to and explicable by the social structures behind them. An example is looking for a performative fallacy – a statement or position that presupposes something in practice that it leaves out in expression –or its more general form: what must be the case for this knowledge (or statement) to be possible?

Metacritique is a technique, a philosophical or theoretical tactic to (1) identify a point of inconsistency or absence in a philosophy or explanation and (2) to then identify the material, socio-historical grounds for that inconsistency or absence. Bhaskar develops this into a TINA formation (in British history under Thatcher's neoliberal approach – where the absence is in service of a social strategy (neoliberal cutting welfare services, for example), which is then, on the level of the discursive obscured and defended (by 'family values" rhetoric, even as families are squeezed economically, as well as by physically repressive measures on the ground. TINA ("there is no alternative") formations are characterized by social relations of denial and exploitation, which Bhaskar follows back to Green master-slave relations, "a world where the absence of human emancipatory possibilities must be legitimated is precisely the kind of world where philosophy, with its power2 (coercive power) commitments, must play its part " (2010: 49).

Philosophical systems develop from, reflect, defend and obscure real social conflicts, creating silences and absences.

Environmental Justice is a value laden way of understanding and engaging with the world. It envisages a different and better way of production and distribution, of respect for nature, and a just society. All its analyses are underlain by this. So it is particularly useful for EJ to see critical realism engaging not only in analysis of theory and methodology, but also to ask where "distorted" or "negative" theory and thinking comes from socially – what social relations drive, for example, the neoliberal growth economy, productionism, racism, the exclusion of women, extractivism etc. These analyses are useful in identifying absences – an important part of EJ analysis when it comes to the Environmental Injustice mechanisms of exclusion from decision making and enclosure of resources (also a form of excluding, because it excludes access to resources).

Activism and the ethical naturalism

Bhaskar introduces an ethical dialectics that emerges subject to the constraints of the historical-material present , driven by a desire for freedom and solidarity, which is seen as inherent in human being, "to universal human emancipation in a society in which the free flourishing of each is the condition of the free flourishing of all" (Bhaskar, DPF :98)

EJ activism is an instance of the underlying ability and drive of people to achieve a just society – under conditions that are not just yet. DCR discusses a situation in which "the desire for freedom, achieved in solidarity, represents the real basis for ethics (Norrie, 2010: 221), in the face of an "elite interest denying change" (ibid) both on the discursive and practical levels. What the options are for ethical action – and so for EJ activism – need to be judged contingently according to the situation. Three situations are discussed:

(1) "Acting morally in an immoral world": where individuals may do "the right thing" even when this does not change the mainstream activities. There may be isolation on the level of the single person, a lack of solidarity or other material-historical constraints on ethical action;
(2) Exercises in "concretely Utopian ethical thinking and practice" which is really the home ground for much environmental activism, projecting alternative soceities and what they may look like, putting these societies and their principles into practice.
(3) This alternative spells out the dangers of "accounts of freedom" being co-opted into oppressive power relationships, for example "legitimation through participation". It warns us to identify and use opportunities in such processes, and not to be used. While "occupying spaces in the mainstream" can be a powerful strategy, in the right circumstances, it constantly moves close to or sometimes over the edge of co-optation (Harvey, 1996).

Critical realism enables us to think through these contradictory situations with an underlying consistency, derived from (1) an understanding of the actual geo-historical situation, with all its specificities and contingencies and (2) based on a fundamental understanding of and identification with ethical striving in the form of EJ activism, which has a reality and agency, seen in its potential beyond the circumstances of the present. It is the open future present in the present.

4. Two examples of using critical realist tools and concepts

Critical realism can be used analysis, as well as a conceptual framework.

4.1 Laminated System of Steel Valley pollution

An important and practical tool is the 7 scalar stratification/ testing of where knowledges are relevant, absent etc, (Bhaskar, 2010). I have used it for an analysis of gaps in water sector research, as mentioned earlier, as well as an analysis of Point of Use filter systems. In looking at PoU research, the analysis was also aimed at identifying gaps in a particular intellectual-practical constellation. PoU studies typically start with a statement of global aggregated numbers of people without access to clean drinking water. In many cases, the causes of this absence are not discussed, as researchers move to a technological solution, that is the invention of an "appropriate technology" filter which is then field-tested. When the filter does not fit into the household or local economy, studies and projects of behaviour change may follow (see Mosler, 2012). The laminated approach enables a systematic analysis of the gaps, and the social structure that creates them – in this case driven by an interventionist "development" approach in "alternative technology. The table below shows a first stab at developing a laminated system for the Steel Valley pollution case study.

The global level (vii)	Climate change, global steel industry (ArcelorMittal as enterprise), Enviro justice movement (is it truly global? Europe, US, Africa, India – China??) and international activist solidarity, legal personality for corporations, limited liability, neoliberal management (is this truly global, China and possibly other regions important exceptions) Sustainable development discourse, environmental management, Agenda 21;
Level of whole cultures and traditions (vi)	Colonialism, Extractivism, creation of waste and pollution in regional (southern African) Minerals Energy Complex, from global to national to local, confronts many fenceline communities. Politics of knowledge as a field of study – agnatology. EJ reframing of contexts and meanings (could be level VII, global meaning making).
The macro-level orientated to understanding the functioning of whole societies or their regions (v)	Political ecology level: The landscape of coal fields. Industrial growth and apartheid spatial ordering in SA since 1950s, specifically in the Vaal Triangle, setting the landscape for pollution exposure for certain communities (US social movement response to environmental racism that develops into enviro justice movement). South Africa transition to post-apartheid state, politics of hegemony within it. Legitimation on a national level. The constitutional right to a healthy environment. The tax dependent national state. South African history of regulation of water quality, air quality, waste in industry and mining.

	South African public opinion, as carried in the media (national debates around pollution). History of SA EJ movement, within SA civil society. National organisation of fence line communities.
The meso-level concerned with sub-national institutions and functional roles (iv)	Rivers, catchments, municipalities, NGOs. Vaal Triangle pollution history. Forums involving polluter and national department of water. Citizens' monitoring of water quality. Scientific evidence of pollution around Iscor/ArcelorMittal. Iscor and ArcelorMittal imposition of pollution (externalization), exclusion of communities from decision making (including exclusion of communities from knowledge), and enclosure of resources.
The micro-level studied, for example, by ethnomethodologists and others (iii)	Social relations. Steel Valley community, fenceline communities, activism. Mobilisation of Steel Valley community, personalities, negotiations around individual farms, relationships with neighbors.
The individual or biographical level (ii)	The body in the environment, e.g. water sources (borehole water from polluted underground water . Meaning making in personal trauma narratives making sense of pollution,.
The sub-individual psychological level (i)	Biogeochemical pollution pathways, on a chemical, biogeochemical level (detail) and corresponding: Toxicology – 3 routes of being poisoned (breathing, ingesting, skin); personal experiences of pollution, participation, resistance and protest. Identification with life style, neighbors, environmental activism.

4.2 Case study of absence at work

Bhaskar argues forcefully that the category of "absence" is for more important than that which is not currently present. In the dialectical critical realist view:

> "A purely positive account of reality cannot ultimately consider how the world might change in fundamental ways, because it cannot grasp that radical futures containing what is absent in the present or past might emerge into being in the future. It therefore legitimates the way things are (Norrie, 2010:44).

So, EJ thinking without critical realism is continuously at risk of being constrained, silenced, blinded and bound by the slipstream of the positivity or the absence of negativity. Absence provides the space and the motivation for the new to emerge.

An example of an extraordinarily productive absence can be recognized at the heart of my case study of Steel Valley. It is an illustration of absence as a cause. This absence was constituted by the denial of Iscor and later ArcelorMittal, of the reality of the pollution of Steel Valley, as introduced in an earlier section of this chapter.

(1) A number of activists and academics were attracted to the Steel Valley case by its very unreasonableness. The denial was interesting because it was a contradiction of the environmental right in section 24 of the SA constitution. It was puzzling – how was it possible? – and it seemed to illustrate a strong use of discursive power, able to override common sense and local and wider knowledge of the "obvious" pollution. It was not only an absence, but a strong absenting of the knowledge needed by fenceline communities to gain environmental justice. This absence invited comparison with other industrial polluter strategies of "deceit and denial", and legitimating practices, studied in "agnotology", the study of how ignorance is created, by Proctor (2008), with examples from the tobacco and lead industries, climate change denial by the same institutions, and the social structures and political agendas behind them. It raised the question of how general this approach is among polluters, and specifically how much of the case study of this phenomenon (this "determinate absence") was more broadly applicable to the Minerals Energy Complex in South Africa, extractive industries in general and how this knowledge could be useful to fenceline communities, activists, regulators and other decision makers.

(2) In response to unfavourable media coverage in 2001 Iscor imposed a gagging court order on 16 applicants in a court case against it (residents of Steel Valley going to court for a stop to the pollution and for compensation). In response – and on legal advice – the children of the applicants formed an organisation – The Steel Valley Crisis Committee – which was able to speak out, which formed the core of the Vaal Environmental Justice Alliance and eventually the Global Alliance against Arcelor Mittal. The silencing of the 16 applicants was a cause of eventual eloquence, combined with the agency of the community and supporting activists that led to this outcome, which resulted in institutional growth and thus a strengthening of the EJ movement local, regionally and internationally.

(3) The nature of this case – the denial, the unreasonableness, the indifference and unreality – attracted support from the Friends of Steel Valley, the WSSD tour, HB Foundation and other funders, the ongoing interest of the funders, which brought networks and resources, financial and intellectual, in the form of solidarity, to this struggle.

(4) The steel factory managements' denial of the reality of the pollution reached an absurd point in the Master plan (Iscor, 2003), in which the pollution they claimed did not exist, was described in fine detail by a team of consultants contracted to them. The Master Plan – an absence in the sense that it was secret, and could not be accessed, quoted, or used in evidence – was nevertheless used as a planning tool in official administrative negotiations with the Department of Water Affairs. When a 2003 water use license application required public participation, the Master plan could be read in a library, but not copied or taken away: it was non-absent on a temporary and spatially limited basis! The Master plan contains to beguile by its absence. It has been subject to a court case requesting access (which VEJA won, but at the time of writing, will be taken to appeal). The arguments justifying this absence are interesting, but space prohibits me from presenting them.

(5) The Master plan is an instance of the "denial of social change by an elite" (Norrie, 2010), through a politics of knowledge which has a material effect of allowing the continued pollution

of the community in the present, in the future through health effects and unremediated groundwater pollution, and in the past through lack of compensation.

(6) Finally, in this paper the absent Master plan allows us to discuss the importance of absenting to environmental justice, a driver for an intellectual search that leads to the study and use of critical realism as a philosophy that brings EJ practice and EJ reflection together.

5. Obstacles and objections

5.1 Neologisms and jargon

There have been objections to Bhaskar's use of new, and sometimes strange sounding words. His explicator and fellow critical realist Sayer objected specifically against the "Niagara of neologisms" (Sayer in Norrie, 2010) in the dialectic turn (Bhaskar, 1993).

While most research fields create an adequate vocabulary, that of critical realism, particularly in the early and core works of CR, can be particularly dense and off-putting. This presents a serious challenge to the EJ movement, which sees the understandability and broad sharing of reflection as essential to movement building and tactical understanding.

On the other hand, the need for a new vocabulary is understandable as part of an effort to escape from more than 2500 years of Western philosophy since the ancient Greeks. Bhaskar's texts are marked by his philosophical and linguistic wrestles with the Ancients and the Moderns, and can be difficult to read, such as the constellation of terms around and dependent on "absence", for example the expression "absenting absences" . Critical realism depends for its explanatory and analytical power on a dense constellation of new terms that often implicate and extend each other and form an evolving thought system.

The "underlabouring" approach provides a way to deal with this dilemma. Bhaskar (2013) writes:

> "Philosophical under-labouring' is most characteristically what critical realist philosophy does. The metaphor of 'under-labouring' comes from John Locke who said, 'The commonwealth of learning is not at this time without master-builders, whose mighty designs, in advancing the sciences will leave lasting monuments to the admiration of posterity: but… it is ambition enough to be employed as an under-labourer in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge.'[i] Critical realism underlabours for a) a science and b) practices of human emancipation."

An underlabouring approach makes it possible to choose specific parts of CR, and use these in conjunction with social theories. Since CR has gone through different stages, which not all critical realists agree with all the way, this is a practical approach.

However, as this essay has hopefully shown, there are really interesting and useful perspectives – and a vocabulary! - that emerge from the system as an open and dynamic whole. In this sense, underlabouring can mean using the terminology in analysis, but presenting the results in more accessible language, as I have done the Point of Use analysis. Some CR terms can readily appear in a text

without alienating readers, even in their technical meaning, such as constellation and freely flourishing society, while the appearance of others – like the family of terms discussing absence – will always "bend" the text. For these, the answer is to "use sparingly and explain", for which Norrie (2010) can serve as an example. There are also two CR dictionaries, or you can phone a critical realist friend when you are stuck.

5.2 The spiritual turn

Some critical realists have not followed Bhaskar through his "spiritual turn", in which he talks about the essential goodness of human nature (Buddha Nature or dharmakaya in Buddhism) and how this basic good nature gets implicated in structures of oppression. I would argue that the revision of Western philosophy would not be complete without addressing the Greek-Christian heritage – the sinful individual and salvation, but that is a topic for another day.

6. Conclusion

This preliminary autobiographical reception study has tried to show that critical realism enabled me to:

(1) Unite into one coherent constellation the elements that I had synthesized in an effort to understand an unreasonable series of pollution events in the case study in my Ph D, and consequently to
(2) Brush out inconsistencies, knots of self-contradictions and entrapment in alienating thinking and expression
(3) Arrive at a robust constellation of terms, techniques of enquiry, basic philosophical understanding in which the various tasks of EJ activism can be thought and discussed together.

In its nature as a social movement (as discussed in the introduction), CR seems to function, at least in parts, as an approach that replaces competition for academic attention space, based on endlessly repeated duals or binaries that reinforce alienation from practice, into solidarity work that focuses on the material gaps in our shared path to a flourishing society. I hope I have contributed to that in a small way.

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NOTES

[i] John Locke, *An Essay concerning Human Understanding*, 'Epistle to the Reader', XXXXXXXX).