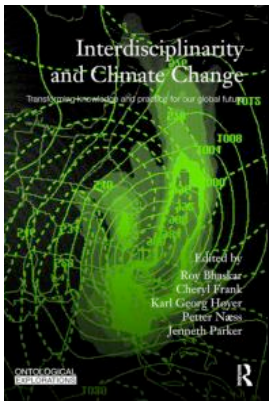
**Book Review**




**Interdisciplinarity and Climate Change,** edited by Roy Bhaskar, Cheryl Frank, Karl Georg Høyer, Petter Naess, and Jenneth Parker; Milton Park, Abingdon, Oxon, and New York: Routledge (Taylor & Francis Group), 2010, 258 pp., $150.00 (hardback), $44.95 (paperback), $47.95 (eBook)

Reviewed by Hunter Lovins

*Interdisciplinarity and Climate Change* is a fascinating book. Important even. Its subtitle, "transforming knowledge and practice for our global future," gives a sense of the breadth of its authors' ambition: to unveil an entirely new discipline while they strive to unite academic departments, and tackle perhaps the gravest threat to life as we know it on earth. The great environmentalist David Brower once said that a goal that can be achieved in one's life is not worth having. It may be that the authors have set themselves a worthy goal. But I sure wish that they'd done it in English.

Fair enough. Professors, unfortunately the only ones likely to struggle through such dense prose, would dismiss anything written in a way that Fox News viewers could grasp. And I'm a lousy academic, tolerating ungraciously pretensions with which "Post hole diggers" cling to their departments. But by restricting their audience and proposing yet another possible silo (they've even created an International Association of Critical Realism), Roy Bhaskar and Jenneth Parker, founders of this field they call "critical realism," risk proliferating the warren of segregated excavations into which academics delight in burying themselves.

The introduction touts the book's contributions to identifying areas of future research in the new discipline. Various authors refer periodically to a dreamy world where pure theory evades any necessity of relevance. *Interdisciplinarity* extols "contributions of theory to enable activist NGOs to collaborate in solving the linked problems of environment and development," although as founder and Board member of many of those NGOs, I was unaware that any lack of collaboration derived from inadequate theory.

Chapter 6 admits to seeking to make

> *Bhaskar's substantial body of emancipatory political, moral and spiritual philosophy increasingly effective in explaining and intervening in urgent social problems. . . . Bhaskar's ontology, together with his concepts of 'four-planar social being', 'the necessity for interdisciplinarity, 'maximum inclusivity', the meaningfulness of the world sui generis, the grounding in reality of human solidarity and the transcendental morality and reasoning of all human being provide philosophical stances which can begin to show the way in which this problem can be addressed and ameliorated.*

Really? This might entice acolytes, but is of little use to activists struggling to mitigate climate chaos before only adaptation and suffering remain. That said, the chapter usefully goes on to propose imagining more attractive futures to entice people to take the sort of action necessary to create them. This mirrors such work as The Future We Want project, which reminds us that the Futuramas of last century's world's fairs made consumers want the material and energy intensive lifestyles now plundering the planet. But The Future We Want uses high-end graphics, animation and personalized video to make alternatives real, arguably a somewhat more useful endeavor than "articulations of emerging and contending social imaginaries."

Perhaps I find the book delightful because the last chapter rightly mocks those of us who burn carbon to save the climate, orbiting the planet to attend extravagant and useless international summits to solve the crisis. But more, my own work defies categorization: I often ask academic audiences to tell me after a lecture whether my discipline is business, economics, engineering, biology, political studies, architecture, sustainability, urban planning, sociology, or atmospheric sciences. Yes, and now perhaps critical realism. Bhaskar and Parker write: "The radical inadequacy of piecemeal approaches to our joined-up world is presented on every page. . . . Crucially, critical realism demonstrates that it is not enough to have a metaphysical disposition to take a joined-up view; intellectual tools are required." And they intend to provide them.

*Interdisciplinarity* challenges education organized around departmental rigidity—as it should. The crises facing the world do not confine themselves to neat categorization. One of the finest practitioners of development implementation now lifting Kabul street orphans from the sex trade into school and honest livelihoods, through the manufacture of fuel briquets from waste paper, is a civil engineer. The founder of biomimicry, bringing biologists to the design table, was an English lit major who wrote field guides. The best

environmental educator is a political scientist.[1] Rigid disciplines do more today to shield students from the questions begging answers and the knowledge they need than they help educate a generation hungering to be a part of the solution.

It's a daunting task, though. As I was writing this review in May 2011, the International Energy Agency reported that despite the recession of the last several years, in 2010, carbon emissions from burning fossil fuels reached the highest rates ever reported: 30.6 gigatonnes (Harvey, May 29, 2011). The year 2010 tied for the hottest year on record. This renders the international community's scientific goal of limiting global warming to 2°C—itself considered by many scientists as far too high—all but unreachable. The US National Snow and Ice Data Center reported that the rate of permafrost melt in the arctic will force an irreversible tipping point within 20 years "with potentially catastrophic implications for climate change" (Connor, May 30, 2011). At the same time, the Noble House trading firm projected that China (with millions of people now without drinking water and facing power outages from the worst drought in 50 years [Kurtenbach, May 26, 2011]) will double coal imports by 2015, with India right behind. As oceans acidify, crops fail, and island nations sink beneath the waves, the climate crisis is very real. However, even with this challenge as the organizing focus, *Interdisciplinarity* reads as if unsure whether it is providing coherent and pragmatic policy prescriptions or establishing new ontological catechisms by proving why solutions are scarce when problems are not considered in an interdisciplinary manner, and by providing arcane case studies.

For example in Chapter 10, Karl Georg Hoyer spends a lot of verbiage considering the advocates in Norway (and elsewhere) who seek a nuclear renaissance of thorium reactors, noting that Norway has large amounts of thorium. Hoyer describes how a revival would have to overcome the historical context of Three Mile Island and Chernobyl (an unfortunate reality of print books is that the now global rejection of nuclear power amidst the ongoing tragedy in Japan is excluded). Useful, technical details on why the thorium fuel cycle is not as nasty as conventional fission are fascinating, but wouldn't it have sufficed to have a paragraph in the book's introduction concluding, as Hoyer ultimately does, that thorium is a non-answer to the climate crisis? Only at the chapter's end does it correctly observe that the one trial reactor under construction in Belgium is still not functional after 20 years. Just noting that even a appallingly expensive crash program in Norway would not have a thorium industry at full scale much before 2050, entirely too late to be of any use in solving the climate crisis, should have sufficed.

[1]The three people described here are Dr. Bernard Amadei, founder of Engineers Without Borders and director of Engineering for Developing Countries; Janine Benyus, co-founder of Biomimicry Guild and founder of the nonprofit Biomimicry Institute; and Dr. David Orr, professor, lecturer, and writer.

Hoyer's real concern, however, seemed not with practicalities, but to prove that this debate is an example of what he calls "technological idealism." He argues that advocacy claims, while true, can lead to the wrong outcome. "The discourse is real, and the claims it is founded on are just as real, but that does not imply that they necessarily are realistic or even true. Claims like these can be part of reality, but still be false." For example, thorium may be better than conventional fission reactors, but it still cannot solve the climate crisis. He likens this to the situation in particle physics, in which he laments, "Purely theoretical works have become common, works where their relation to reality is largely considered a non-issue."

Fair point, but the critique of using rhetoric to argue for bad answers, while fascinating, is clearly of greater interest to philosophers than to activists who are bludgeoned by this practice every day.

Snarky quibbles aside, the editors have assembled an impressive stable of international experts to make their arguments. Although just what critical realism might be (as opposed to uncritical fantasies of those who lay awake at night wondering whether what works in reality can possibly work in theory?) remains a mystery, clearly the approaches we've all used to date are insufficient. Perhaps it's time to give their approach a try.

Many of the contributors have long labored to knit together disparate university programs, cross-pollinating departments to enable students to tackle real world problems in ways that might deliver useful solutions. And that is clearly desperately needed.

The take-home chapter is Bob Costanza's "The need for a transdisciplinary understanding of development in a hot and crowded world." Justly famous for his formative role in creating the academic discipline of ecological economics, Costanza understands what the proponents of critical realism face. Rather than fuss about theory, however, he nods to the field, then sets forth the sort of pragmatic principles and policies that enable practitioners to achieve "ecological sustainability, social fairness and economic efficiency." This eminently readable chapter describes the mental model that got us into the mess, of which climate chaos is only one manifestation, and more useful ones that might get us out. He reprises ecological economics in ways that offer practical guidance to policy and effective action to deliver higher quality life to all people.

It's unfortunate that the book did not focus on the business case for solving the climate crisis. Many of us believe that market mechanisms remain the most potent tool for implementing the known technologies to meet our energy needs affordably and abundantly with energy efficiency and renewables. *Climate Capitalism*, my recent book

with Dr. Boyd Cohen, profiles what entrepreneurs, companies, and communities are doing to build prosperity, create new jobs and enhance national security. But the sobering statistics above show that even greed may no longer be a sufficient incentive to overcome the well-paid climate deniers.

Perhaps a dose of critical realism is what the world needs.

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