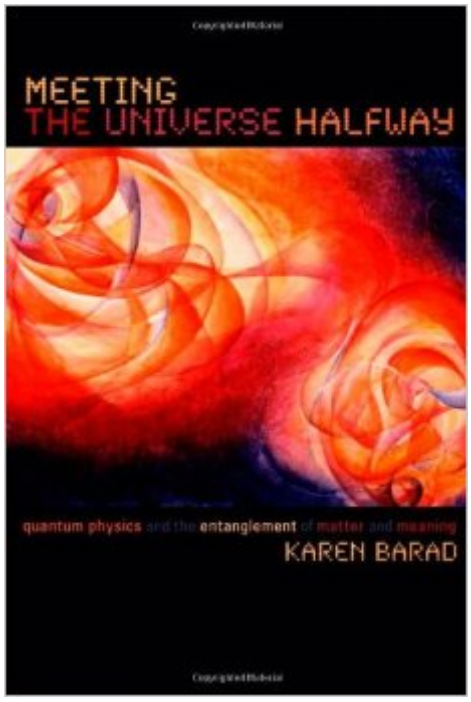
Meeting The Universe Halfway: Quantum Physics And The Entanglement Of Matter And Meaning



Synopsis

Meeting the Universe Halfway is an ambitious book with far-reaching implications for numerous fields in the natural sciences, social sciences, and humanities. In this volume, Karen Barad, theoretical physicist and feminist theorist, elaborates her theory of agential realism. Offering an account of the world as a whole rather than as composed of separate natural and social realms, agential realism is at once a new epistemology, ontology, and ethics. The starting point for Baradâ ™s analysis is the philosophical framework of quantum physicist Niels Bohr. Barad extends and partially revises Bohrâ ™s philosophical views in light of current scholarship in physics, science studies, and the philosophy of science as well as feminist, poststructuralist, and other critical social theories. In the process, she significantly reworks understandings of space, time, matter, causality, agency, subjectivity, and objectivity.In an agential realist account, the world is made of entanglements of â œsocialâ • and â œnaturalâ • agencies, where the distinction between the two emerges out of specific intra-actions. Intra-activity is an inexhaustible dynamism that configures and reconfigures relations of space-time-matter. In explaining intra-activity, Barad reveals questions about how nature and culture interact and change over time to be fundamentally misguided. And she reframes understanding of the nature of scientific and political practices and their â œinterrelationship.â • Thus she pays particular attention to the responsible practice of science, and she emphasizes changes in the understanding of political practices, critically reworking Judith Butlerâ ™s influential theory of performativity. Finally, Barad uses agential realism to produce a new interpretation of quantum physics, demonstrating that agential realism is more than a means of reflecting on science; it can be used to actually do science.

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Customer Reviews

In the preface to Meeting the Universe Halfway, Karen Barad says, "This book is about entanglements. To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence."The subsequent pages are an elegant mesh of detailed explanations of social theories, scientific concepts and new pathways of technological innovation; all explored and then rewoven to form the carefully constructed foundation for her theory of agential realism. A theoretical framework wherein human, machine and interactions between, are all actually phenomenon that make up the world as agents in a dynamic of change, where "...knowing does not come from standing at a distance and representing but rather from a direct material engagement with the world."A scholar of Neils Bohr’s writings and work, she explains how the man who won the Nobel Prize for his model of the atom did not believe "in the inherent distinction between subject and object, knower and known," and how he struggled to rectify problems with quantum theory, problems with measurement and even got Heisenberg to postscript an admission of inadequacy in his uncertainty principle (although it is for the most part ignored). Yet Bohr was too human-centric in his viewpoint to see a way out. With agential realism, she picks up where he left off and takes us to a post-humanist world where "reality is composed of things-in-phenomena." She "propose(s) an interpretation of quantum physics based on agential realism.

Barad is an ex(?) - theoretical physicist. She is able to explain her ideas clearly - which is a wonderful change from many "continental" philosophers. I had no trouble with the physics but I have a degree and 25 years experience in medical imaging so I might not be an average test case. Her basic point is that we should be more aware that things do not always pre exist properties rather they come into being via property-relations -in fact jointly with context. Put this way it doesn’t sound very world shattering or original, however this is where the book enters concept inflation mode rendering it tedious to read: Firstly Barad shoots first person pronouns like a maniac. Secondly she repeats her arguments dozens of times -sometimes using identical words. Thirdly she claims, in early chapters, to use a non-representational non-metaphorical discourse called ’diffraction’ with a claim to be non metaphorical we will understand by the end of the book - there is however no clarification forthcoming and in the notes she seems to have changed her mind -diffraction is demoted to metaphor (a useful one though I think). Fourthly she bases her position on "a cut" that is

made in the phenomenon - on one side (apparatus side) the degrees of freedom are massively reduced - this universal distinction is not implemented or dependant on human or even indeed biological involvement. Clearly then, she proposes a piece of physics - however little unqualified (very) evidence is supported and there is no attempt to explain how classical physics and the world of things arises - in other word the crucial problem of scale is just bypassed. Fifthly she veers towards the crackpot in some of her feminist applications of the "cut".

In Meeting the Universe Halfway, Karen Barad convincingly removes the human observer from the center of the quantum formalism. To ruin the punchline, she does this by re-introducing the human observer into the physical universe, and in particular into the quantum entanglements being observed. To loosely paraphrase Barad, obtaining determinate values for a quantum phenomenon is what it is like to be entangled *in* that phenomenon; the collapse of the wave function is in fact no collapse at all but rather what it is like to *become* entangled in that phenomenon; in other words, determinate values are what you get in the view from *within*.Barad metaphorically labels her overall approach to the subject "diffractive". The approach is to draw unflinchingly from different disciplines and let the "interference patterns" reveal themselves, much like how dropping rocks into a pool sets up interference patterns that reinforce and dampen each other in interesting ways. She draws from science studies, social studies, feminist studies, etc. - but her principal inspiration is quantum mechanics and in particular Niels Bohr. Key insights obtained from this exercise are the performative-ness of the universe (in contrast to the usual focus on thing-ness) as it continually creates novel possibilities for itself (at the cost of excluding others) in its own becoming.Barad then introduces her metaphysics of "agential realism". In her metaphysics, phenomena (or more precisely, quantum entanglements) are the basic ontological unit. At its most fundamental, this metaphysics is about how material cuts (or distinctions) performed as part of the ongoing becoming of the universe can lead bodies to leave marks on one another (cause and effect) within each entanglement.

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