

*Basic Structures of Reality: Essays in Meta-Physics*, by Colin McGinn. New York, NY: Oxford University Press, 2011. Pp. viii + 243.

*This is the penultimate draft of the version to be published in Mind. Please only cite the final version. Copyright Kerry McKenzie.*

Some years ago, Colin McGinn decided to ‘turn [his] attention to fundamental metaphysics’. Though he hadn’t ‘seriously worked on philosophy of physics before’ and had to ‘learn it from scratch’, he wanted ‘to think about the most basic categories of reality’ through ‘philosophical reflections on basic physics’ (p. 3). The volume here reviewed represents the fruits of these labours. His stated purpose is to communicate his insights on fundamental physics whilst taking seriously ‘the injunction to be clear to my colleagues who may not’—unlike Prof. McGinn himself—‘know much about the details of physical theories’; hence nothing in his book ‘should be baffling to readers innocent of the technicalities—no equations, no unexplained jargon, no mystification’ (p. 4). His basic thesis is that ‘a deep ignorance lies at the heart of physics, despite its formal richness’ (p. 5) so that ‘the entire world is shot through with mystery’ (p. 7). In consequence, our best theories of physics come—by some extraordinary coincidence—to mirror perfectly McGinn’s famed theory of the mind.

Part of the reason McGinn judges physicists deeply ignorant of their subject matter is that they don’t engage with the hard metaphysical questions he is able to form in his head, such as the question of ‘in virtue of *what*’ matter is ‘absolutely and constantly impenetrable’ (p. 33). McGinn offers an answer to this question with his ‘Deletion Theory’, according to which matter annihilates space whenever it occupies it—thus creating ‘holes in space’ of varying depth, the depth proportional to the mass of the object. (Naturally, we’ll have to postulate an ‘*extra dimension*’ to space to accommodate the effects of mass at the particle level’, but given that we have got ‘(somewhat!) used to entertaining the idea of extra dimensions to space in String Theory’ we needn’t be resistant to this consequence (p. 41).) Only in a shoehorned-in ‘Postscript’ does McGinn moot that what might explain physicists’ indifference to the stated question is the fact that matter *is not impenetrable*—something that has in fact been known since at least the advent of quantum mechanics. While one would be excused for taking this to render the previous chapter obsolete, it turns out to be easily dealt with: for

why not say that fields, though they do not *delete* space, can nevertheless *dilute* it? Call this the ‘Dilution Theory’. According to this theory, when a field comes to pervade a region of space it *thins the space out*, so that it is less “dense” than before... [Thus] while solid matter deletes space... electrical fields act to dilute space, and hence make it *harder* to occupy (by like charged particles) (p. 46).

Bracketing for now McGinn’s misinformed belief that quantum wavefunctions are ‘nothing but graded force’ and identical with electrical fields (p. 46), we can ask some fascinating questions. How, according to the Dilution Theory, can we superpose an unlimited number of wavefunctions at a single point? And what

happens when we have particles that are un- or unlike-charged? We eagerly await his answers.

But don't think that physicists are deeply ignorant only as to the nature of matter. A deep confusion similarly wracks the physicist's concept of motion. Like a *Daily Mail* 'People's Champion' column taking aim at Einsteinian physics, Chapter 3 tries to salvage our 'normal conception' that motion is absolute with a proof of the logical impossibility of empty space if motion is merely relative (pp. 78-80). (I'd mention that the spacetime explicitly assumed here is one in which there are facts about the identity of points of space over time—precisely that which was jettisoned in Neo-Newtonian spacetime in order to extradict absolute motion. But why bother with technicalities?) McGinn admits that the experimentally verified fact that the speed of light is the same in all frames would apparently contradict his theory, but assuages this worry by

suppos[ing] that the absolute speed of light *is* constant, which means that observers can reduce the difference of speed between themselves and light, hence varying relative speed—but that relative speed is always *measured* as constant. It is thus not really constant, but only apparently constant. ... The apparent constancy is a kind of *interaction* effect—an effect of the measurement relation between light and the observer (p. 90).

My only query to McGinn on this point is why he settled for a mere philosophy book as the forum in which to publish it. After all, in an effort to preserve his pretheoretic views about motion he's discovered an as-yet unknown type of interaction: should not *Physical Review* be alerted?

Part of the motivation McGinn offers for believing that physicists do not understand motion—as opposed to providing 'plausible sounding would-be explanations that don't stand up to scrutiny'—is that by making motion as conceptually opaque as matter 'we achieve a theoretical unity in the basic terms of the science' (p. 88). Unity of science is thus achieved by our not having the foggiest idea about anything in it—with the rapturously Hegelian consequence that our knowledge is proportional to our ignorance. But the above questions of why matter is impenetrable and how motion can be absolute despite being merely relative by no means exhaust the questions McGinn is amazed to find physicists not giving a stuff about. Here is another:

I am struck by the fact that treatises on particle physics never say what *shape* the particles have, and whether different kinds of particles might have different shapes. In diagrams they are usually depicted as spherical, but such a determination never plays a role in the theories of particles—unlike questions of charge and mass. Would it matter if an electron had a star shape? (p. 93)

Call this missing theory of particle shape the 'Lucky Charms' theory of matter. Sadly, space constraints prohibit me from discussing this theory further.

McGinn's thesis, to repeat, is that our technical competence with physics 'conceals vast chasms of ignorance' (p. 141). This is, in many ways, an appropriate conclusion for someone with no grasp of the rudiments of the subject. It *is* true that there are desperately challenging questions posed by fundamental physics that continue to defeat metaphysicians. But as with the claims of a crystal-wielding cryptic, McGinn's arguments rely on the mere fact that such challenges exist to give their conclusions the veneer of the profound.

As was said of the Sokal hoax, there is simply no way to do justice to the cringe-inducing nature of this text without quoting it in its entirety. But in a nutshell, *Basic Structures of Reality* is an impressively inept contribution to philosophy of physics, and one exemplifying everything that can possibly go wrong with metaphysics: it is mind-numbingly repetitive, toe-curlingly pretentious, and amateurish in the extreme regarding the incorporation of physical fact. With work this grim, the only interesting questions one can raise concern not the content directly but the conditions that made it possible; and in this connection, one might be tempted to present the book as further evidence of the lack of engagement of metaphysicians with real science—something that has lately been subject to lively discussion (and I myself have slung some of the mud). But I'd insist that to use this work to make a general point about the discipline would in fact be entirely unfair. For one thing, while contemporary metaphysicians *are* often tokenistic in their treatments, I think most would appreciate that *looking at the pictures in a book* is of limited value qua research into unobservable entities, even if it is the auspicious '1700-page textbook *University Physics*' (p. 129) that informs McGinn's critique. Furthermore, McGinn has scant interest in getting to grips not only with the relevant science, but also the work of fellow philosophers wrestling with questions similar to those he feigns to be concerned with here. Despite defending dispositional essentialism, for example, there is no mention of Mumford, Ellis or Bird; he cites nothing by Maudlin, or Albert, or virtually any philosopher that naturalistically inclined metaphysicians have grown to rely upon for philosophy of physics input, with the result that his philosophical argumentation is strewn with undergraduate-level errors. Similarly, while given the title one would expect some meaningful engagement with the field of structural realism (something, I add, that he fundamentally misrepresents, as aficionados can confirm on page 10), instead we find *a single reference* to a contemporary work in that area—namely, 'Mark Lange's article "Structural Realism" in the online *Stanford Encyclopedia*' (p. 5). Since Marc (that's 'Marc') Lange is *not a structural realist*, and it was in fact *James Ladyman* who wrote said Stanford article, one can only assume it is the latter's piece that McGinn has in mind here. (One also can't help but assume, of course, that he never actually bothered to read it.)

For all the epistemic faux-modesty that this book purports to defend, the image that persists while grinding through its pages is of an individual ludicrously fancying themselves as uniquely positioned to solve the big questions for us, from scratch and unassisted, as if none of the rest of us working in the field have had anything worth a damn to contribute. It will however be clear by now that I regard the reality to be substantially different. For me, then, the one pertinent question this work raises is why all of this went unrecognized: this book, after

all, issues not from one of the many spurious publishing houses currently trolling graduate students, but Oxford University Press—a press whose stated aim is to ‘publish works that further Oxford University’s objective of excellence in research, scholarship, and education’. So why did they publish this? I can hazard no explanation other than that Colin McGinn is a ‘big name’, and if that is sufficient for getting work this farcical in print with OUP then shame on our field as a whole. As such, McGinn’s foray into philosophy of physics may in the end provoke a worthwhile discussion, if sadly one focused on concerns rather different from those he himself had in mind.

KERRY McKENZIE

Department of Philosophy  
University of Calgary  
2500 University Drive  
Calgary, Alberta, T2N 1N4  
Canada