

the fundamental objects of the world are nonindividual.

D'Espagnat's core notion of a "veiled reality" is proposed as fitting snugly on top of those physical foundations; the second half of the book is devoted to articulating that proposal further by comparing it with related positions, and defending it from criticism. The basic idea is reminiscent of Kantian views in that the central purpose of science is gaining knowledge not of "the Real" but of "phenomena." The Real, according to the author, lies beyond the phenomena and cannot be approached quantitatively, nor is it embedded in a spatiotemporal framework because that would imply nonlocality; it nevertheless exerts an influence on the phenomena. The grand laws of physics are "highly distorted reflections . . . of the great structures of 'the Real'" (page 455). The Real, although impossible to conceive, is non-separable; from it, both consciousness and empirical reality "co-emerge." Putting it crudely, what d'Espagnat proposes is a kind of transcendental realism grounded in quantum holism and hence fit for the modern age.

The ambitious reach of the book is impressive, and the tour of d'Espagnat's philosophical mansion is often illuminating and thought provoking. But

running through the edifice are cracks, papered over by the erudite language. He mentions "influence" and "reflection," words that have to carry a heavy, philosophical weight. And with d'Espagnat demoting the truth to the realm of "empirical" reality only, the relationship between laws and reality in particular needs shoring up with an appropriate notion of representation. In addition, other constructs, with cleaner lines and easier-to-grasp blueprints, can be built on the foundations of physics. Although central to his arguments, d'Espagnat's analysis of nonseparability and nonlocality fails to mention various resources that the realist can draw on. Paul Teller's "relational holism," for example, is driven by a similar feeling that object-oriented metaphysics is simply incapable of handling quantum entanglement, but by couching the quantum entanglement in familiar relational terms, Teller declines to place a veil between us and the world in the way d'Espagnat does.

Likewise, a number of realist-inclined philosophers have recently advocated approaches that focus on the structural aspects of reality, some of which have been explicitly designed to accommodate quantum phenomena. But d'Espagnat is perhaps too quick to

dismiss such views; he focuses on Henri Poincaré, whose work in the early 20th century was an early precursor of those approaches but has been superseded by recent developments in the philosophy of science (pages 370–373). The point is, metaphysically cheaper and simpler constructions are on the market, and neither philosophically inclined physicists nor scientifically aware philosophers need to mortgage themselves to the hilt by buying into such an elaborate structure as the author presents.

On Physics and Philosophy contains interesting aperçus and thoughtful commentaries suitable for both parties. Nevertheless, the philosophical inclinations of the physicist will have to be powerful indeed to push him or her through this often dense and, dare I say, entangled text.

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