



## A Disappointed Philosopher of Nature

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## A disappointed philosopher of nature

**Nicholas Maxwell (2017) *In Praise of Natural Philosophy: A Revolution for Thought and Life*. McGill-Queen's University Press, Montreal & Kingston. ISBN: 978-0-7735-4903-6, 342 pages, price: US \$ 29.95 (paperback).**

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The recent book by Nicholas Maxwell, emeritus reader in history and philosophy of science at the University College London, unfolds its argument in eight chapters: on classical natural philosophy, a brief history of the emergence of science, critical views on philosophy and its failures as perceived by Maxwell, stimulating arguments on why science needs philosophy and *vice versa* (dealing with values, social uses of science, the problem of how experiential qualities can exist in a physical world, evolution, consciousness, free will, and education). The book concludes with a discussion of the implications of the views presented, plus two appendices, one on degrees of 'theory unity' and one on the problem of induction. The back cover claims the book to be ambitious, wide-ranging, and visionary.

The book is indeed ambitious in the sense that Maxwell thinks that an intellectual revolution is needed to re-connect science and philosophy in the pursuit of rational knowledge, and that most scientists and especially philosophers have failed to see why science needs philosophy, in his view especially metaphysics, and why philosophy needs science. Maxwell's hope is that the book (together with all his previous books and papers, meticulously listed, referred to, and quoted in many footnotes) will convince them. He notes that the book grew out of his intellectual autobiography ("Arguing for Wisdom in the University", *Philosophia* 40 (4): 663-704, 2012), and both that essay and the present volume express high degrees of frustration about too few having paid enough attention to Maxwell, his work and his claims. The reader must be prepared not only to engage with a strenuous argument for an intellectual revolution, but also with a disappointed revolutionary, who yet made it to do philosophy for a living. Like the great North-American philosopher C. S. Peirce, with whom he seems strangely unacquainted, Maxwell could say "May some future student go over this ground again, and have the leisure to give his results to the world".

About the book being wide-ranging, one must admit that Maxwell addresses many topics and argues for wide-ranging, even civilisatoric, implications of what he suggests should be an overturn of the dominant (as he sees it) stance of *standard empiricism* (SE) among contemporary philosophers and scientists, and its substitution with his own so-called *aim-oriented empiricism* (AOE), a view that seeks explicitly to acknowledge and integrate the metaphysical assumptions made in modern physics. This will, or should, lead to a kind of 'wisdom-inquiry' with implications not only for science, but also for social, political, economic, and even personal life (p. 218). While science is a way of producing knowledge, wisdom is seen as "the capacity and active endeavour to realize (apprehend and create) what is of value in life, for oneself and others" (pp. 208, 227). The relation and difference between knowledge and wisdom is not analyzed, neither is the question of what value is, or the nature of values like democracy, justice, art, kindness, friendship, and love; these are just mentioned in passing.

However, Maxwell's outlook on present-day science is strangely narrow. Apart from sketchy discussions of Darwin's theory, 'science' for Maxwell is predominantly synonymous with theoretical physics with its aim of finding one big theory of 'everything' and its norm of theoretical unification. He doesn't even ask whether such epistemic norms can smoothly translate into quite different areas of science such as chemistry, biology, medicine, the Earth sciences, climate science or other interdisciplinary fields, not to speak of the human and social sciences, and he does not deal with these sciences in any detail. Furthermore, Maxwell approaches science very much like a philosopher of science in the positivist tradition (corresponding to SE) that he criticizes, focusing on the structure of physical theories and their interrelations. This focus and the questions discussed are

quite removed from fields like philosophy of science in practice, sociology of science, and science and technology studies, which may be one of the reasons why Maxwell feels that relatively few are responding to his work. However, despite repeated jarring complains about missing responses, his total contributions are far from having been neglected, as shown by citation registers. In 2009 Leemon McHenry edited a whole volume with scholarly papers engaging in different aspects of his work (*Science and the Pursuit of Wisdom: Studies in the Philosophy of Nicholas Maxwell*).

Is the book visionary? It contains a plea for the application of scientific methods in social planning that reminds one of what Popper (in *The Open Society and Its Enemies*, 1945) wrote about “piecemeal social engineering”, and Maxwell acknowledges (p. 231, and other parts of his book) his intellectual debt to Popper. But even though this debt is real, one wonders what Popper, so critical about the platonic idea of philosophers-as-rulers, would have thought of the close parallel Maxwell elaborates between the hierarchical structure of AOE (his philosophical stance developed in the first part of the book), and the idea in the last chapter of transferring this structure of rational aims and methods to “our institutions and social life” (p. 227) to make it possible to progressively “improve our real-life aims and methods”. This seems more like a receipt for a technocratic regime than a gain for human civilization, and it fits oddly with Maxwell’s wish for a new Enlightenment that integrates both rationalist and romantic values (p. 232). But this may not be his main point, and hardly visionary.

So, what is the core of Maxwell’s vision? That there would be a transformation of both science and philosophy, so that these two domains of thought become one: “natural philosophy”. Would that be a kind of unification? Perhaps, but I doubt such unification could be achieved without falling into the traps of reductionism (believing that all things can be understood within one single perspective, be it philosophical or scientific). Maxwell suggests to get “appropriately generalized progress-achieving methods of science into our institutions and ways of life” (p. 225), but one of the lessons from the history of technology and civilization not addressed in the book is the ambivalent nature of progress.

There could be other, more polymath and polyphonic ways of re-inventing Natural Philosophy, and it is strange that Maxwell does not address them. Think for instance about the idea of salon-like cultural spaces for discussing the existential and social implications of not only physics but also the complexity-, neuro-, computer- and cognitive sciences, as promoted by John Brockman and the members of ‘the reality club’ and Edge Foundation (see his 1995 book *The Third Culture*). Maxwell imagines that a unification of science and philosophy will have far-reaching consequences for the whole academic enterprise, and thinks that universities need to be reorganized so that they become devoted to seeking and promoting wisdom by rational means – as opposed to just acquiring knowledge. Given the tendencies these days to govern universities in a top-down manner and restrain academic freedom, one can only be sympathetic to some of Maxwell’s ideas, but exactly what the new organization should be, how to reform educational programs, what this would mean for different research fields, departments, and so on, are not addressed. Maxwell does not base his rather vague vision upon a detailed analysis of the present-day university structures around the world, their different normative systems and socio-political contexts. If his book is visionary, its vision is a quite abstract utopia.

One of the points Maxwell makes well is that modern science began as natural philosophy. What today we call science and philosophy formed in Newton’s time one integrated enterprise: to improve our knowledge and understanding of the universe. We are given a detailed and nuanced picture of the shifting role of ‘metaphysical hypotheses’ in Newton’s work. Profound discoveries were made in the following period, but slowly natural philosophy died, or rather, it split into science and philosophy. In his brief account of “the death of natural philosophy and the triumph of science” (p. 51ff) we hear nothing about the medical and biological sciences or the interrelationships between Natural Philosophy and Natural History. According to Maxwell’s pessimist view, these two fragments, contemporary science and philosophy (especially analytic philosophy), are defective shadows of the glorious unified endeavour of natural philosophy. For him, rigour, sheer intellectual good sense and decisive argument demand that we put the two together again, and rediscover the

merits of an integrated enterprise of natural philosophy. That this requires an intellectual revolution, with profound consequences for how we understand the universe, perform science and philosophy, and tackle global problems, is a postulate that remains unclear and slightly unconvincing, for several reasons. One such is Maxwell's narrow focus on physics and analytic philosophy. Another is the existence of different styles of research in the human, social and natural sciences; remember just the famous six distinct styles of scientific thinking and doing – geometric postulation, experimental method, hypothetical-analogic modelling, taxonomy, statistical analysis, and historical derivation – as mapped in detail by Alistair Crombie (*Styles of Scientific Thinking in the European Tradition*, 1994) and discussed in a series of papers by Ian Hacking and others (a well-written historical introduction is Chunglin Kwa's 2011 book *Styles of Knowing: A New History from Ancient Times to the Present*).

By restricting himself to theoretical physics as his main base of scientific case stories, Maxwell avoids asking the questions of how such distinct styles must be taken into account in order to understand the nature of scientific inquiry, and how they could ever be unified. Had he even considered the non-unified parts of physics (like condensed matter physics, geophysics, or non-equilibrium thermodynamics), he might have questioned the universality of unification as a scientific norm. It would also have been relevant for him to comment upon an important contribution to a new natural philosophy, the one expounded by Ilya Prigogine and Isabelle Stengers in their 1984 book *Order out of Chaos: Man's new dialogue with nature*.

I mention Prigogine and Stengers' contribution to underscore that I do not mean to imply that it is futile to search for connections between philosophy of nature and philosophy of science. (In the 1990s I was part of the formation of a Centre for the Philosophy of Nature and Science Studies at the Niels Bohr Institute in Copenhagen to explore the field between ontology, science, and science studies). But given the variety of modes or styles of research, one should think that if you want to understand the problems related to the concept of nature in its broadest sense – for instance the place of subjectivity and value in Nature – within a modern, scientifically based world view, you also have to take into account the nature of different scientific research traditions and processes in which new knowledge (not only about the physical world) is created, discovered, constructed and rearranged. The difficult circumstance that both philosophers, researchers and scholars from various fields will differ in their specific metaphysical, epistemological and methodological commitments should not block the process of inquiry into these questions. Acknowledging a variety of approaches may in fact help finding new connections between different philosophies of nature and the fields of history and philosophy of science, and science studies in general.

Many of the specific proposals that Maxwell puts forward in his final chapter deserve attention and I would like to quote the last three: 1) "Natural science needs to create committees, in the public eye, and manned by scientists and non-scientists alike, concerned to highlight and discuss failures of the priorities of research to respond to the interests of those whose needs are greatest — the poor of the Earth — as a result of the inevitable tendency of research priorities to reflect the interests of those who pay for science, and the interests of scientists themselves." (p. 239); 2) "Every national university system needs to include a national shadow government, seeking to do virtually, free of the constraints of power, what the actual national government ought to be doing. The hope would be that virtual and actual governments would learn from each other." (p. 239); 3) "The world's universities need to include a virtual world government which seeks to do what an actual elected world government ought to do, if it existed. The virtual world government would also have the task of working out how an actual democratically elected world government might be created" (p. 239).

As a comprehensible addition to the discussions about the purposes of academia, Maxwell's book must be recommended. There is much in Maxwell's complex message to be inspired by, if only the reader is prepared to accept the book's personal style and its tendency to curtail natural philosophy to a single, physics centered perspective.