

Preamble

Modern physics was rightly built by freeing itself from certain ancient philosophical conceptions of motion. The principle of inertia, in particular, required a break with Aristotelian physics.

But in abandoning certain answers, was it also necessary to abandon all the questions that had given rise to them?

This is one of the questions running through this book. The aim is in no way to return to Aristotelian physics, but to ask whether certain fundamental questions — those of cause, motion, becoming and, ultimately, a possible driving principle — do not deserve to be raised again in the light of contemporary physics.

For this purpose, philosophy and science must be neither confused nor separated. Philosophical reflection that ignored the achievements of modern physics would risk reasoning on the basis of an outdated representation of the world; but physics itself rests on concepts — space, time, motion, causality and simultaneity — whose coherence and scope sometimes need to be examined.

Some of these notions might be said to belong to a protophysical level: they are presupposed by the very construction of our physical theories, while being too general to be dealt with entirely by any single particular science. Their examination therefore naturally calls for a confrontation between physics, logic and philosophy.

In this respect, I can only recommend reading Mario Bunge, particularly his work *Philosophy of Physics*. Despite the breadth of his expertise, Mario Bunge was a remarkably approachable interlocutor. I had a few exchanges with him in the 1990s. What may not have been sufficiently perceived at the time — including by

myself — was the way in which my own approach, more explicitly metaphysical, could nevertheless converge with some of his concerns regarding the conceptual foundations of physics.

This book is situated within that area of confrontation. I will not seek here to move from philosophical reflection to theological developments. This choice also has a methodological advantage: it avoids mixing different levels of discourse, which could impair the clarity of the whole and lead some readers, because of their convictions concerning theology or Revelation, to reject conclusions that can be examined and possibly established on philosophical, logical and scientific grounds alone.

As early as 1990, in *À la recherche de la théorie de l'univers*, I proposed a very general definition of the scientific approach: every science seeks, within its own field, to discover a certain necessity through principles that it discovers or establishes according to its object, and then confronts these principles with the particular reality it seeks to understand. Taken in this very broad sense, this conception of science can apply both to philosophy and to physics, and thus provide common ground on which they can meet.

Theology belongs to another register, insofar as it is traditionally understood as a subordinate science deriving an essential part of its principles from Revelation. It may therefore extend certain philosophical questions, but it cannot be required in order to establish conclusions that must be open to discussion independently of it.

The question pursued here will therefore be deliberately more limited, though perhaps already sufficiently ambitious: what can philosophical reflection on foundations contribute to our understanding of the physical world, and what, in return, does physics compel us to rethink philosophically?