



# Philosophy of Natural Science

*Carl G. Hempel*

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## **Philosophy of Natural Science** Carl G. Hempel

This volume explores the logic and methodology of scientific inquiry rather than its substantive results.

## **Philosophy of Natural Science Details**

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Author : Carl G. Hempel

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# From Reader Review Philosophy of Natural Science for online ebook

## Vasile Rotaru says

This is a great, classical introduction to some traditional issues of the philosophy of natural science. There are, of course, better, more comprehensive and serious introductory books on this subject, but Hempel's could still be used as a starting point.

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## Alexan Martin-Eichner says

More valuable as a review of mainstream empirical realism than as an actual treatise.

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## Tea says

ja sam ovo ?itala zbog ispita iz filozofije nauke ali moram priznati da mi nije žao što sam pro?itala! pošto je meni ovo bio prvi put da se susre?em sa filozofijom nauke, rekla bih da je ovo skroz ok za stvaranje slike neke po?etne! ipak, 4 zvezdice jer bilo puno pozivanja na neke koncepte iz prirodnih nauka (baš ?udno, pa knjiga se zove filozofija prirodnih nauka!) ali na na?in kao da se pretpostavlja da se to ve? zna.. a ja eto mnogo toga od ponu?enog nisam znala pa onda guglaj i sli?no. zato 4? ina?e, kao osnova super a i stil je ok, za razliku od kunovog npr.

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## Drew says

Jimmies = refreshingly rustled

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## Ryan says

Philosophy of Natural Science was a delightful balance of brevity and depth. It was as lucid as well as rigorous account of the foundations of scientific thought and method. I found wonderful insight into the nature of scientific hypotheses and theories.

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## Alatea says

Very useful, but super hard to understand.

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## **Evangelidis Basil says**

Must be read by everyone who studies science and philosophy matters. A simple and clear idea in the structure of the book, supported by groundbreaking empirical evidence.

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## **Reader2007 says**

Science, Faith, and Technology.

Really confusing, and could be much less wordy. Conclusions are good, though!

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## **Folkert Wierda says**

Again a study book I read 35 years ago. Hempel is old-school standard model philosophy of science. But I must admit that he shows a decent level of relativism, he is not preaching nor black and white in his prescriptions regarding the scientific process. He discusses hypothesis forming, concepts, theory and briefly, really briefly, in the last chapter, the discussion about reductionism.

Hempel doesn't have a very colorful style of writing, and he presents the topic in a quite abstract fashion. I assume there are better introductory texts if you need to get into it.

Folkert

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## **Bob Nichols says**

The book was technical and dry. Most of it involved the hard sciences where definitions and data are precise.

Hempel clarifies that to describe phenomena and predict its behavior is not the same thing as explaining why it operates as it does. We have a “strong grounds for believing” that “galaxies recede from our local one at enormous speeds, yet [this] does not explain why.” Hempel also cautions that a scientific law “cannot be adequately defined as a true statement of universal form” without specifying the accompanying conditions (laws “are known to hold only approximately and with certain qualifications”). As an example of a qualified form pertains to “probabilistic laws” such as the possibility that measles might be contracted under certain conditions. Hempel does not discuss whether there are implications of quantum physics for the “philosophy of natural science.”

For humans, as natural phenomena studied scientifically, Hempel uses the “mind-matter psycho-physical problem” to specifically illustrate the division between reductionism (psychological phenomena that “can be reduced to those of biology, chemistry, and physics”) and something that exists beyond this. Hempel uses behaviorism as an example of reductionism that rejects “all reliance on methods such as introspection, which can be used only by the subject himself in a phenomenalist exploration of his mental world; and it does not admit as psychological data any of the ‘private’ psychological phenomena – such as sensations, feelings, hopes, and fears – that introspective methods are said to reveal.” I am not clear whether he is supporting this

kind of reductionism but, if he is, he misses a good part of who we are. It could be that Hempel is saying that there is no mind-matter problem (in the sense of an inherent division), but rather, that science has not identified how chemical-electrical signals are [‘mechanically’] transformed into the representation of reality and encapsulated as memory.

At the end of the book, Hempel refers to “methodological individualism” in the social sciences that explains individual behavior in terms of “individual psychology, biology, chemistry, and physics” but Hempel casts it outside of the realm of science. Or, rather, he says that this is a problem for the “philosophy of the social sciences,” not “the philosophy of natural science,” which is the scope (and title) of his book.

Hempel bumps into a problem with biology. It’s almost like he’s saying that biology is not a science. As it now stands, life phenomena are deemed to be “manifestations of underlying teleological agencies of a nonphysical kind, referred to as entelechies or vital forces.” Hempel cautions against the import of mysterious life forces that neither describe nor explain life phenomena with the precision necessary to be viewed properly as science. Biology remains, he says, a neo-vital discipline and science must continue to “persist in the search for basic physico-chemical theories of biological phenomena rather than resign himself to the view that the concepts and principles of physics and chemistry are powerless to give an adequate account of the phenomena of life.”

A clue to Hempel’s views on biology is given in this description: “Living systems...display a variety of striking features that seem to be distinctly purposive or teleological in character,” he writes. This “that seems to be” reference is interesting given that living beings are clearly purposeful. They do what needs to be done to survive. Acknowledging that biological processes are highly varied and not as neat and tidy as the non-life sciences, “it seems to be” a step too far to exclude life science from natural science. Is there a problem with the definition of natural science? Is hard science criteria appropriate for the “life sciences?” In this book, Hempel appropriates the “natural science” terminology when, perhaps, the book should have been titled the “philosophy of physical science” which, like biology, would be then a subset of “natural science.”

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**Julia Tibblin says**

Good bye Hempel see you never

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