

Hume's Natural Philosophy and Philosophy of Physical Science

Matias Slavov



BLOOMSBURY

Preface

The book at hand centers around David Hume's (1711–1776) natural philosophy and philosophy of physical science. It reaches both into Hume scholarship and the history of philosophy of physics ranging from Cartesian cosmology to special relativity.

Hume's Natural Philosophy and Philosophy of Physical Science has two equally important ambitions. First, it deepens our understanding of Hume's relation to natural philosophy. This aspect of his work has not received considerable attention in Hume studies. Hume is widely acknowledged as being the greatest philosopher to have ever written in English, and consequently today an ample number of scholars in the Americas, Europe, Australasia and Japan peruse his work and publish several academic articles and monographs on it yearly. Second, the book shall demonstrate that philosophy and physics have had (and arguably still have) overlapping domains of investigation. These overlapping domains pertain to the central matters of the book. It involves the topics of experimentalism, causation, laws of nature, metaphysics of forces, mathematics' relation to nature and the concepts of space and time.

Table of Contents

Preface

Previous publications used in this book

List of figures

Special fonts

Acknowledgements

Introduction

Method and viewpoint

Chapter outlines

1 The Concept of Natural Philosophy

Philosophy and physics

Early modern natural philosophy

2 Science of Human Nature and Natural Philosophy

Hume's ambition: Science of human nature

Hume's education in natural philosophy

Hume's interest in and analyses of various natural philosophical issues

Is Hume doing natural philosophy?

Comparing metaphysics to natural philosophy

3 Experimentalism

Boyle on probability and the category of fact

Newton's experimentalism and criticism of hypotheses

Hume's experimentalism

Matters of fact: experience, testimony, and probability

4 Laws of Nature, Causation, and the Ontology of Forces

The notion of a law of nature

Laws are causal

Causation as discovered constant conjunction

Mechanism and causal power in laws of nature

5 The Relation of Mathematics to Nature

Hume's doctrine of relations and his fork

The application of mathematics

Mixed mathematics instantiates epistemic virtues

Is the book of nature written in the language of mathematics?

6 Space and Time

The absolutist argument

Newton's criticism of Descartes

Hume on space as extension

From the idea of time to a full-fledged relationist ontology

7 Hume's Impact

Special relativity

Humeanism and NonHumeanism about laws of nature

Causation and laws

Physics and intelligibility

Bibliography

Index