

NATURE FROM WITHIN



NATURE FROM WITHIN

**Gustav Theodor Fechner
and His Psychophysical
Worldview**

Michael Heidelberger

Translated by Cynthia Kloor

University of Pittsburgh Press

Published by the University of Pittsburgh Press, Pittsburgh, Pa., 15260

Copyright © 2004 University of Pittsburgh Press

All rights reserved

Manufactured in the United States of America

Printed on acid-free paper

10 9 8 7 6 5 4 3 2 1

ISBN 0-8229-4210-0

<CIP DATA SHEET TO COME>

CONTENTS

Preface	000
Introduction	000
PART I History	
Chapter One: Life and Work	000
1.1 Ancestry and Early Years	000
1.2 Oken's and Schelling's Philosophies of Nature	000
1.3 Turning to Physics and Overcoming Philosophy of Nature	000
1.4 Herbart's Psychology	000
1.5 The Aesthetic and Romantic View of Nature	000
1.6 The Philosophy of Late Idealism	000
1.7 Beginning Philosophical Work	000
1.8 Illness	000
1.9 The Day View's Origins	000
1.10 Written Work after 1851	000
1.11 The Day View as Contrasted with the Night View	000
1.12 Fechner's Life after Recovery	000
PART II Philosophy	
Chapter Two: Nonreductive Materialism	000
2.1 Knowing and Believing	000
2.2 Fechner's Mind-Body Theory: "The Identity View"	000
Chapter Three: Philosophy of Nature	000
3.1 Philosophy of Nature and "Belief"	000
3.2 Psychological Phenomena as Functional States	000
3.3 The Day View as Scientific Identity Philosophy	000
3.4 Direct Realism: The Objective Reality of Phenomena	000
3.5 Further Implications of the Day View	000
PART II Day View Science	
Chapter Four: Scientific Realism and the Reality of Atoms	000
4.1 Fechner's Early Writing on Atomism	000
4.2 The "Theory of Atoms"	000

4.3 Realism Includes Phenomenalism	000
4.4 Mach Turns to Anti-Atomism	000
Chapter Five: Psychophysical Parallelism: The Mind-Body Problem	000
5.1 Psychophysical Parallelism Dates Back to the 1850s	000
5.2 Psychophysical Parallelism from Fechner to Feigl	000
5.3 Schlick and Carnap Enter the Scene	000
5.4 Psychophysical Parallelism in the United States: Herbert Feigl	000
Chapter Six: Psychophysics: Measuring the Mental	000
6.1 Basic Concepts	000
6.2 The General Principle of Measurement and Measuring Sensation	000
6.3 Applying the Principle of Measurement to Gauging Sensations	000
6.4 Objections to Quantifying Psychical Phenomena	000
6.5 Ernst Mach's Theory of Measurement	000
6.6 Measurement Theory and the Day View	000
Chapter Seven: Self-Organization and Irreversibility: Order Originating from Chaos	000
7.1 Life and Organic Development	000
7.2 The Philosophical and the Scientific Context	000
7.3 From Fechner to Freud and Peirce	000
7.4 Self-Organization Today	000
Chapter Eight: Indeterminism: From Freedom to the Laws of Chance	000
8.1 Fechner's Indeterminism	000
8.2 Excursus I: Freedom and Physiology	000
8.3 Excursus II: Epigenesis and Philosophy of History	000
8.4 "Collective Objects"	000
8.5 From Fechner to Von Mises	000
Conclusion	000
Appendix	000
Notes	000
Bibliography	000
Index	000

PREFACE

This book began with a paper on Fechner's *Theory of Measuring Collectives* contributed to a project at The Center for Interdisciplinary Research at the University of Bielefeld. That article now forms the final chapter of *Nature from Within*. The overall project dealt with what is known as the "probabilistic revolution," or the pattern of how probabilistic and statistical methods gradually became established in empirical science (see Krüger 1987). While working on that paper I developed an interest in other areas of Fechner's thought, not directly connected with issues of probability and statistics. I found links of which I had previously been unaware: I was astonished to see that even the philosophical tradition to which I personally owe the most, namely, logical empiricism, was itself originally part of a significant historical trend within the overall philosophical movement of German idealism. (This is not to deny that logical empiricism in one respect does represent a "new epoch in philosophy," as Moritz Schlick has said.) But a scholar can indeed, whether or not he is conscious of it, remain faithful to a certain underlying tradition, although on the surface he seemingly resists it. Once we know how contemporary philosophy of science of a logical-empirical provenience is related to the philosophy of the early nineteenth century, several other historical and systematic ties become easily discernible. Fascinated by this discovery, I resolved to pursue the matter further. My readers now hold the fruit of these efforts in their hands: a study in Fechner's philosophy of science and nature.

Writing this book helped me to examine my own convictions. I wanted to understand just how some of the motives that shaped contemporary philosophy of science relate to reasons of my own—reasons that led me in a particular direction in the philosophy of science.

An early version of this work was presented as a habilitation thesis during the winter term of 1988–1989 to the philosophical faculty at the University of Göttingen. I am grateful to both my advisors and my critics there. Special thanks is due to Lorenz Krüger for critical and encouraging debate and strong support as this work progressed. I also thank my friends in Göttingen; their enthusiastic friendship helped me through tough moments. My deepest gratitude goes to my wife and children; words cannot express just how decisive our bond has been.

Sections of chapters four through eight appeared in earlier versions as Heidelberg 1988a (chapter 4), 1986, 1993 (chapter 6), 1990, 1990a (chapter 7), 1987 (chapter 8). Chapter 2 slightly coincides with Heidelberg 1988. Chapter 5 appeared as Heidelberg 2003.

I would like to thank Cynthia Miller and her colleagues at the University of Pittsburgh Press for making this edition possible and for guiding me through the process. I thank Cynthia Klohr, too, for her fine rendition and valuable advice. I am also grateful to the Goethe Institute Inter Nationes for cofunding the translation and to all the reviewers consulted. My university relieved me of duties for one semester in order, among other things, to complete the English edition—a gesture much appreciated.

Bringing forth an English edition allowed me to slightly revise the work and enhance it. Chapter 5, for instance, is entirely new. I also took this opportunity to additionally include most of the more recent literature on Fechner. Since no up-to-date English renditions of Fechner's opus are currently available, the translator has taken the liberty of phrasing the quotations in English. The original appeared as *Die innere Seite der Natur: Gustav Theodor Fechners wissenschaftlich-philosophische Weltauffassung*, Frankfurt am Main: Vittorio Klostermann, 1993.

NATURE FROM WITHIN

