Contents of Volume 1

regularities.

	Contents of Volume 2	ix
	List of Contributors to Volumes 1 and 2	xiii
	Preface to Volumes 1 and 2 Lorenz Krüger	xv
	Introduction to Volume 1 Lorraine J. Daston	1
I	REVOLUTION	
1	What Are Scientific Revolutions? Thomas S. Kuhn Three examples of revolutionary change in scientific concepts are developed, concluding with a brief epitome of some significant characteristics that all three share.	7
2	Scientific Revolutions, Revolutions in Science, and a Probabilistic Revolution 1800–1930 I. Bernard Cohen Careful attention to the testimony of contemporary witnesses and the etymological career of the word "revolution" itself provide criteria for judging whether a scientific revolution has occurred. By these criteria, a revolution occurred not in probability itself but rather in its applications in the period 1800–1930.	23
3	Was There a Probabilistic Revolution 1800–1930? Ian Hacking An analysis of the only sense in which there was a Probabilistic Revolution 1800–1930, followed by a breakdown of this revolution into four successive stages of conceptual change.	45
II	CONCEPTS	
4	The Slow Rise of Probabilism: Philosophical Arguments in the Nineteenth Century Lorenz Krüger Probabilism is taken to denote the view that statistical laws may be fundamental in scientific explanation. Several philosophical problems impeded its recognition, among them the fusion of the dominant epistemological tradition with deterministic mechanical theory, the confused conceptions of causation, and the obstinate difficulties involved in understanding the nature of statistical	59

5	The Decline of the Laplacian Theory of Probability: A Study of Stumpf, von Kries, and Meinong Andreas Kamlah	91
	The breakdown of Laplace's theory of probability at the end of the nineteenth century is studied. We find a genuine scientific revolution in Kuhn's sense, a partly irrational gestalt switch.	
6	Fechner's Indeterminism: From Freedom to Laws of Chance Michael Heidelberger Fechner's universal indeterminism of 1849 originated in the opposition of late idealism to the rigor of Hegelian logic. The posthumously edited mathematical formulation of his ideas served as the model for von Mises's frequency theory.	117
7	The Saint Petersburg Paradox 1713–1937 Gérard Jorland This exhaustive review of the tentative solutions of the Saint Petersburg paradox from 1713 to 1937 aims at showing the role the paradox has played throughout in the controversies over the fundamentals of probability theory.	157
8	Laplace and Thereafter: The Status of Probability Calculus in the Nineteenth Century Ivo Schneider Laplace's form of probability theory dominated the subject until the 1880s. The key figure who blocked the impact of Laplace's possible successors, like Poisson, was Cauchy. Cauchy's attacks on the subject reduced research to error theory.	191
9	Emile Borel as a Probabilist Eberhard Knobloch Borel's publications on probability theory were mainly influenced by Poincaré, Bertrand, Reichenbach, and Keynes. But his realistic conception of mathematics led him to oppose their views. He believed that the applications were more important than the axiomatization of the theory. Rejection of the continuum, determinism, and unpredictability were crucial problems for him.	215
Ш	UNCERTAINTY	
10	The Domestication of Risk: Mathematical Probability and Insurance 1650–1830 Lorraine J. Daston Mathematical probability and statistics were not applied to insurance until the end of the eighteenth century when the	237

11

12

IV

13

14

15

Bernard-Pierre Lécuyer

Quetelet's ideas about probabilities in the social sciences are

emergence of new values that opposed the salaried class' fear of sudden poverty to the gambler's hope of sudden riches overcame resistance to quantifying uncertainty.	
The Objectification of Observation: Measurement and	
Statistical Methods in the Nineteenth Century	261
Zeno G. Swijtink In the nineteenth century, the rise of formal, nondeductive methods of reasoning like the method of least squares presupposed, and reinforced, an objectification of scientific procedure; personal judgment in observation disappeared through the use of measuring instruments, which led to "observation without an observing subject."	
The Measurement of Uncertainty in Nineteenth-Century	
Social Science	287
Stephen M. Stigler	
The central conceptual problem faced in extending probability-based statistical methods to the social sciences is discussed and exemplified through contrasting aspects of the works of Quetelet and Lexis.	
SOCIETY	
Rational Individuals versus Laws of Society: From	
Probability to Statistics	295
Lorraine J. Daston	
Both the eighteenth-century moral sciences and the nineteenth-century social sciences viewed the mathematical theory of probability as "social mathematics," but the meaning of "probability" and the relationship between probability and statistics had to be redefined in order for it to serve both the psychological moral sciences and the sociological social sciences.	
Décrire, Compter, Calculer: The Debate over Statistics	
during the Napoleonic Period	305
Marie-Noëlle Bourguet	
Napoleonic statisticians shifted from descriptive ethnography to quantitative methods only when social science became a search for causes rather than a classification of types.	
Probability in Vital and Social Statistics: Quetelet, Farr, and the Bertillons	317

395

16

17

18

(William Farr in England, and Dr. Louis-Adolphe Bertillon an his son Jacques in France) are examined.	d
Paupers and Numbers: The Statistical Argument for Socia Reform in Britain during the Period of Industrialization Karl H. Metz	al 337
Urbanization, industrialization, and the rise of a market econo promoted growing interest in numbers in the early decades of t nineteenth century. Social statistics became the empirical basis social policy in Britain through the interplay of sanitary statistiand social reform in the 1830s.	he of
Lawless Society: Social Science and the Reinterpretation of	of
Statistics in Germany, 1850–1880	351
Theodore M. Porter	
German social scientists and reformers were prominent among those writers of the late nineteenth century who denied that statistical regularities were laws of the average man. They came to see statistical method as applying best to communities of genuinely diverse individuals, governed only approximately by mass regularities.	;
Prussian Numbers 1860–1882	377
Ian Hacking	5,,
An institutional history of the Prussian Statistical Bureau at its	

presented, and their impact on three statistical practitioners

19 How Do Sums Count? On the Cultural Origins of Statistical Causality

apogee is used to illustrate fundamental differences between Western liberal and atomistic conceptions of probability and those

of a conservative and holistic German ideology.

M. Norton Wise

The idea of probabilistic causation as expressed by the founders of quantum mechanics should be regarded as continuous with earlier discussions of "psychical," "qualitative," and "statistical" causality among psychologists and social theorists. The latter ideas, in turn, should be understood within the general context of holistic social-political thinking designated "moderate liberal."

Name Index for Volumes 1 and 2	427
Subject Index for Volumes 1 and 2	437

Contents of Volume 2

	Contents of Volume 1	xi
	List of Contributors to Volumes 1 and 2	xv
	Preface to Volumes 1 and 2 Lorenz Krüger	xvii
	Introduction to Volume 2 John Beatty, Nancy Cartwright, William Coleman, Gerd Gigerenzer, and Mary S. Morgan	1
I	PSYCHOLOGY	
	The Probabilistic Revolution in Psychology—an Overview Gerd Gigerenzer	7
1	Probabilistic Thinking and the Fight against Subjectivity Gerd Gigerenzer	11
2	Statistical Method and the Historical Development of Research Practice in American Psychology Kurt Danziger	35
3	Survival of the Fittest Probabilist: Brunswik, Thurstone, and the Two Disciplines of Psychology Gerd Gigerenzer	49
4	A Perspective for Viewing the Integration of Probability Theory into Psychology David J. Murray	73
П	SOCIOLOGY	
5	The Two Empirical Roots of Social Theory and the Probability Revolution Anthony Oberschall	103
III	ECONOMICS	
	The Probabilistic Revolution in Economics—an Overview Mary S. Morgan	135

6	Why Was There No Probabilistic Revolution in Economic Thought? Claude Ménard	139
7	The Rise of Macroeconomic Calculations in Economic Statistics Robert A. Horváth	147
8	Statistics without Probability and Haavelmo's Revolution in Econometrics Mary S. Morgan	171
IV	PHYSIOLOGY	
9	Experimental Physiology and Statistical Inference: The Therapeutic Trial in Nineteenth-Century Germany William Coleman	201
\mathbf{V}	EVOLUTIONARY BIOLOGY	
	The Probabilistic Revolution in Evolutionary Biology—an Overview John Beatty	229
10	Natural Selection as a Causal, Empirical, and Probabilistic Theory M. J. S. Hodge	233
11	Dobzhansky and Drift: Facts, Values, and Chance in Evolutionary Biology John Beatty	271
12	Random Genetic Drift, R. A. Fisher, and the Oxford School of Ecological Genetics John R. G. Turner	313
13	On the Prior Probability of the Existence of Life Bernd-Olaf Küppers	355

Contents of Volume 2

VI PHYSI	ICS
----------	-----

	The Probabilistic Revolution in Physics—an Overview Lorenz Krüger	373
14	Probabilistic Physics the Classical Way Jan von Plato	379
15	Max Born and the Reality of Quantum Probabilities Nancy Cartwright	409
16	Philosophical Problems of Quantum Theory: The Response of American Physicists Nancy Cartwright	417
	Name Index for Volumes 1 and 2	437
	Subject Index for Volumes 1 and 2	447