Preface	vii
I. Two Traditions	
1. Two main traditions in science and in the philosophy of scientific method: the aristotelian and the galilean. Their association with man's efforts to understand things teleologically and to explain them causally.	1
2. Characterization of positivism as a position in the philosophy of science. Emphasis on the unity of scientific method, on mathematical exactitude as an ideal of perfection, and on the subjection of phenomena to general laws.	·3
3. Hermeneutics as a reaction to the methodological monism of positivism. The Geisteswissenschaften. The distinction between explanation and understanding. The psychological and the semantic aspects of understanding.	4
4. The ambivalence of the positions of Hegel and Marx. Hegel and Aristotle. The explicit "causalism" of marxism contrasted with its implicit teleology.	7

5. The revival of positivism and its immersion in the broader current of analytic philosophy. The rift in the latter. The implicit antipositivism of linguistic philosophy. The traditional positivism of analytic philosophy of science. Methodology of the behavioral and social sciences in the mid-century.

8

6. Hempel's theory of scientific explanation. The deductive-nomological and the inductive-probabilistic covering law model. The second not a model of explanation, but a device for the justification of expectations and predictions.

10

7. Division of the province of teleology into the domains of function and purpose on the one hand and of intentionality on the other hand. Cybernetics and "the causalization of teleology."

15

8. Criticisms of the positivist view of scientific laws. Conventionalism. The distinction between nomic necessities and accidental uniformities. The role of modal logic and of the problem of counterfactual conditionals in the revival of the notion of natural necessity.

18

9. The rise of an analytic philosophy of action. Anscombe on intentionality and practical reasoning. The critique of positivism in the analytic philosophy of history (Dray) and of social science (Winch).

22

10. The revival of a hermeneutic philosophy of the Geisteswissenschaften. Affinities with analytic philosophy. Rifts in marxist thinking between a "humanist" orientation towards hermeneutics and a "scientistic" orientation towards positivism.

29

## II. Causality and Causal Explanation

1. Causation not an obsolete category in the philosophy of science. The subsumption theory of explanation challenges the idea of nomic connections—and therewith the problem of causation.

34

2. Causal relations as conditionship relations. Sufficient and necessary conditions. The extensionalist-quantificational and the intensionalist-modal view of conditionship relations. 38 3. The asymmetry of cause and effect. This cannot be accounted for in the terms of temporal relationship alone. The possibility of "retroactive causation." 41 4. The formal-logical apparatus involved: propositional logic, propositional modal logic, and propositional tenselogic for a discrete time-medium. States of affairs as basic ontological category. The notion of a world and its history. A topological presentation of the possible histories of a world. The notion of a system. 43 5. Causal analysis within systems. Chains of sufficient conditions can have no gaps; chains of necessary conditions may have gaps. The notion of closedness. 50 6. Types of causal explanation. The questions "Why necessary?" and "How possible?" Answers to questions of the first type can be used for making predictions; answers to questions of the second type for making retrodictions. Quasiteleology or the causal explanation of purposefulness in nature 55 7. The closed character of systems established by "putting them in motion" through an act of interference with the course of nature. 60 8. Action and causation. Distinction between doing and bringing about. Basic actions. 64 9. The experimentalist notion of causation. The distinction between cause- and effect-factors rests on the distinction between things done and things brought about through action. The factual conditions which make action logically possible also provide a basis for distinguishing between

nomic connections and accidental uniformities in nature.

69

10. The problem of asymmetry of the causal relation. The possibility of retroactive causation reconsidered. It is suggested that, by performing basic actions, an agent may bring about anterior events in his neural system. Determinism a metaphysical illusion nourished by a tendency to think that mere observation of regular sequences suffices to establish nomic connections.

74

## III. Intentionality and Teleological Explanation

1. Distinction between causal and quasi-causal explanations. The latter do not depend for their validity on the truth of nomic connections. Their prominence in history and social science. Distinction between teleological and quasi-teleological explanations. Dependence of the latter on nomic connections. Their prominence in the life sciences.

83

2. Behavior and action. The inner and the outer aspect of an action. Muscular activity as the immediate outer aspect of action. The result of an action distinguished from its causal antecedents and its consequences. Action and forbearance.

86

3. The relation between the inner and the outer aspect of an action. The view of the former as a humean cause of the latter. This view is contested by supporters of the Logical Connection Argument.

91

4. Practical inference. Is it logically conclusive? Its relation to teleological explanations. The premises of a practical inference describe a volitative-cognitive complex.

96

5. Practical inference is concerned with the necessary means to a given end of action. Intention and the supposed ability of the agent to achieve the object of intention.

98

6. In the formulation of a practical inference account must be taken of the possibility that the object of intention is in the future and that the agent may become prevented from carrying his intention into effect.

103

7. How does one establish that an agent sets himself to do a certain thing? The burden of verification shifted to the premises of a practical inference.

107

8. How does one establish the presence of an intention and cognitive attitude in an agent? The burden of verification shifted to the conclusion of a practical inference. Intentional behavior is a meaningful gesture. The gesture has meaning only in the setting of a story about the agent.

110

9. The question of the compatibility of a causal and a teleological explanation of behavior. The two explanations have different explananda. Distinction between the intentionalist understanding of behavior as action and the teleological explanation of action as a means to an end.

118

10. The question of compatibility reconsidered. The intentionalist interpretation of behavior as action is contingently related to the existence of a humean cause of the behavior. Belief in universal causation a dogma which cannot be proved true on a priori grounds.

125

# IV. Explanation in History and the Social Sciences

1. Orders of acts of intentionalist understanding of behavioral data. Individual and group behavior. An answer to the question "What is this?" colligates facts under a new concept. "Emergent qualities" in group behavior.

132

2. Genuine causal explanations in history and social science. Their role as links between explanans and explanandum in explanations which are not (genuinely) causal.

135

3. Quasi-causal explanations in history. The shots at Sarajevo and the outbreak of the First World War as example. How the happening of events affects the motivation background of practical inferences ending in action.

1 39

4. External and internal changes in the motivation back-

ground of action. The importance of technological changes—a paradigm of explanation for the social process.

5. Making people do things and the notion of normative pressure. Normative pressure has a teleological background which is built up under the influence of reward and punishment. This background can be more or less remote from the individual action. In the limiting case normative pressure deteriorates to a causal mechanism of stimulus and (conditioned) response.

145

144

6. Distinction between rules which regulate conduct and rules which define various social practices and institutions. Rules of the second kind do not exert normative pressure and do not figure in the teleological explanation of behavior. But they are of prime importance to the understanding of behavior—and therefore to the descriptive tasks of anthropologists and social scientists.

151

7. Quasi-teleological explanations in history. The attribution of (new) significance to earlier events in the light of later happenings. Why, for conceptual reasons, there can be no such thing as a complete account of the historical past.

153

8. Cybernetic explanations of purposefulness. The working of feedback processes in history and the life of societies is not humean causation under covering laws but motivational necessitation through practical inferences. Feedback mechanisms and the "negation of negation." The cybernetic and systems-theoretic reinterpretation of hegelian and marxist key notions.

156

9. Distinction between two ideas of determinism in history. Determinism as predictability. Predictability on the macro- and the micro-level. The supposed role of probability and the laws of great numbers for the reconciliation of freedom and necessity. The manipulability of systems from outside by an experimenter—and from inside by the subjects of the behavioral study. The fallacies of "historicism."

160

10. Determinism as intelligibility of individual action and of the historical process. The limits of teleological explan-

ation, as that of causal explanation, a matter of experience. The claim that history has an immanent goal transcends the boundaries of a "scientific" study of man and society.	
	16
Notes	169
References	207
Name Index	223
Subject Index	226