Praxis Yugoslav Essays In The Philosophy And Methodology Of The Social Sciences

#praxis yugoslavia #social sciences philosophy #social sciences methodology #yugoslav thought #social theory essays

This insightful collection explores the concept of Praxis within the Yugoslav context, featuring essays that delve into the core philosophy and methodology applied in the social sciences. It offers critical perspectives and valuable contributions to understanding social theory and research practices during that era.

Praxis

This volume of the Boston Studies is a distillation of one of the most creative and important movements in contemporary social theory. The articles repre sent the work of the so-called 'Praxis' group in Yugoslavia, a heterogeneous movement of philosophers, sociologists, political theorists, historians, and cul tural critics, united by a common approach: that of social theory as a critical and scientific enterprise, closely linked to questions of contemporary practical life. As the introductory essay explains, in its history and analysis of the development of this group, the name Praxis focuses on the heart of Marx's social theory - the conception of human beings as creative, productive makers and shapers of their own history. The journal Praxis, which appeared regularly in Yugoslavia at Zagreb, and also in an International Edition for many years, is the source of many of these articles. The journal had to suspend publication in 1975 because of political pressures in Yugoslavia. Eight members of the group were dismissed from their University posts in Belgrade, after a long struggle in which their colleagues stood by them staunchly. Yet the creativity and productivity of the group continues, by those in Belgrade and elsewhere. Its contributions to the social sciences, and to the very conception of social science as critical and applied theory, remain vivid, timely and innovative. The importance of the theoretical work of the Praxis group is perhaps at its height now.

Praxis

Stephen Turner has explored the ongms of social science in this pioneering study of two nineteenth century themes: the search for laws of human social behavior, and the accumulation and analysis of the facts of such behavior through statistical inquiry. The disputes were vigorously argued; they were over questions of method, criteria of explanation, interpretations of probability, understandings of causation as such and of historical causation in particular, and time and again over the ways of using a natural

science model. From his careful elucidation of John Stuart Mill's proposals for the methodology of the social sciences on to his original analysis of the methodological claims and practices of Emile Durkheim and Max Weber, Turner has beautifully traced the conflict between statistical sociology and a science offactual description on the one side, and causal laws and a science of nomological explanation on the other. We see the works of Comte and Quetelet, the critical observations of Herschel, Buckle, Venn and Whewell, and the tough scepticism of Pearson, all of these as essential to the works of the classical founders of sociology. With Durkheim's essay on Suicide and Weber's monograph on The Protestant Ethic, Turner provides both philosophical analysis to demonstrate the continuing puzzles over cause and probability and also a perceptive and wry account of just how the puzzles of our late twentieth century are of a piece with theirs. The terms are still familiar: reasons vs.

The Search for a Methodology of Social Science

Without of course adopting a Platonic metaphysics, the eighteenth-century philosophes were Grecophiles who regarded the Athenian philosophers as their intellectual forbearers and mentors. So powerful was their identification with c1assification that ancient ideas were taken as keys to the design of the modem world, but usually the ideas were taken separately and as divided from their systematic context. The power of number was an idea the En lightenment thinkers deployed with their legendary passion and vigor, particularly as an instrument for social reconstruction. It is no exaggemtion to say that the role of quantities in contemporary social scientific theorizing cannot be understood with any depth absent a recollection of the philosophes' axial development of the notion of quantification. It is a commonplace that for the philosophes progress required releasing human abilities to have power over nature. Aprerequisite for this power was knowledge of the underlying causes of natural events, knowledge that required quantitative precision. Enlightenment thinkers were sufficiently aware of themselves as products of their time to appreciate the importance of a liberal social environment to the knowledge enterprise; the supposition that the reverse is also the case, that enhanced knowledge could advance social conditions, came easily.

The Qualitative-Quantitative Distinction in the Social Sciences

Patrick Suppes is a philosopher and scientist whose contributions range over probability and statistics, mathematical and experimental psychology, the foundations of physics, education theory, the philosophy of language, measurement theory, and the philosophy of science. He has also been a pioneer in the area of computer assisted instruction. In each of these areas, Suppes has provided seminal ideas that in some cases led to shaping the direction of research in the field. The papers contained in this collection were commissioned with the mandate of advancing research in their respective fields rather than retrospectively surveying the contributions that Suppes himself has made. The authors form an interesting mixture of researchers in both formal philosophy of science and science itself all of whom have been inspired by his ideas. To maintain the spirit of constructive dialogue that characterizes Suppes's intellectual style, he has written individual responses to each article. In Volume 1: Probability and Probabilistic Causality, nineteen distinguished philosophers and scientists focus their attention on probabilistic issues. In Part I the contributors explore axiomatic representations of probability theory including qualitative and interval valued probabilities as well as traditional point valued probabilities. Belief structures and the dynamics of belief are also treated in detail. In Part II the rapidly growing field of probabilistic causation is assessed from both formal and empirical viewpoints. For probability theorists, statisticians, economists, philosophers of science, psychologists and those interested in the foundations of mathematical social science. In Volume 2: Philosophy of Physics, Theory Structure, and Measurement Theory, fifteen distinguished philosophers and scientists cover a wide variety of topics. Part III covers issues in quantum theory, geometry, classical mechanics, and computational physics. Part IV explores Suppes's well known set-theoretic account of scientific theories which has served him well throughout his career. Suppes's contributions to measurement theory have been widely used in mathematical psychology and elsewhere, and this material is the subject of Part V. For physicists, logicians, workers in mathematical social sicence, and philosophers of science. In Volume 3: Philosophy of Language and Logic, Learning and Action Theory, fourteen distinguished philosophers and scientists explore issues in the philosophy of language, logic, and philosophical psychology. Suppes's suggestions that quantum theory requires a rethinking of classical logic form a particularly sharp account of that controversial thesis, and Part VI deals with this issue together with topics in the philosophy of language and logic, including relational grammars and anaphora. Part VII deals with issues in psychology, action theory, and robotics, while Part VIII concludes with a general survey of Suppes's views in the philosophy of science. A comprehensive chronological and topical

bibliography of Suppes's writings is included in this volume. For philosophers of language, theoretical linguists, logicians, workers in mathematical social sciences, and philosophers of science.

Patrick Suppes: Scientific Philosopher

This book is intended as an exposition of a particular theory of time in the sense of an interrelated set of attempted solutions to philosophical problems about it. Generally speaking there are two views about time held by philosophers and some scientists interested in philosophical issues. The first called the A-theory (after McTaggart's expression A-determinations for the properties of being past, present or future) is often thought to be closer to our commonsense view of time or to the concept of time presupposed by ordinary language. It includes at least the following theses, (a) Logic ought really to include tensed quantifiers for existence on one of its important usages means, present existence. More generally, we can't reduce all tensed locutions to tenseless ones. (b) The distinction between past, present and future is an objective one. It is not, for example, dependent on our consciousness of change; some A-theorists hold also, that the distinction, in effect, is an absolute one.

Time: A Philosophical Analysis

The contributions to this special collection concern issues and problems discussed in or related to the work of Wesley C. Salmon. Salmon has long been noted for his important work in the philosophy of science, which has included research on the interpretation of probability, the nature of explanation, the character of reasoning, the justification of induction, the structure of space/time and the paradoxes of Zeno, to mention only some of the most prominent. During a time of increasing preoccupation with historical and sociological approaches to under standing science (which characterize scientific developments as though they could be adequately analysed from the perspective of political movements, even mistaking the phenomena of conversion for the rational appraisal of scientific theories), Salmon has remained stead fastly devoted to isolating and justifying those normative standards distinguishing science from non-science - especially through the vindi cation of general principles of scientific procedure and the validation of specific examples of scientific theories - without which science itself cannot be (even remotely) adequately understood. In this respect, Salmon exemplifies and strengthens a splendid tradi tion whose most remarkable representatives include Hans Reichenbach, Rudolf Carnap and Carl G. Hempel, all of whom exerted a profound influence upon his own development.

Probability and Causality

The Lvov-Warsaw School was active in all spheres of philosophy. Its members worked in the border area between philosophy and disci plines such as psychology, linguistics, and literary theory. But its most important achievements were without doubt in logic and philosophical analysis based on logic. The present book is concerned with fields to which the Lvov-Warsaw School made its most important and famous contributions. Data on the School as a whole are included only in the first and last part of the book. This work is based on my monograph (1985), which appeared in Polish. But it is not merely a translation, because some fragments of the Polish version have been omitted (e. g., the chapter on ethics), and some have been revised. Many persons helped me in my work on the book in Polish as well as on the present edition. I must first mention the late Izydora D~mbska, to whom this book is dedicated. On various detailed issues I have availed myself of advice and information given to me by Stefan Amsterdamski, Zdzislaw Augustynek, Kazimierz Czarnota, Henryk Hii, Boleslaw Iwanus, Jacek Jadacki, Jacek Kabziliski, Stanislaw Kiczuk, Tomasz Komendzinski, Janina Kotarbinska, Czeslaw Lejewski, Jerzy Perzanowski, Marian Przet~cki, the late Jerzy Slupecki, Klemens Szaniawski, Stefan Zamecki, Zbigniew Zwinogrodzki i Jan Zygmunt. I am indebted to Jaakko Hintikka for suggesting that my book be trans lated into English and published by Reidel. Olgierd Wojtasiewicz helped me to prepare the English text.

Logic and Philosophy in the Lvov—Warsaw School

Featuring the Gestalt Model and the Perspectivist conception of science, this book is unique in its non-relativistic development of the idea that successive scientific theories are logically incommensurable. This edition includes four new appendices in which the central ideas of the book are applied to subatomic physics, the distinction between laws and theories, the relation between absolute and relative conceptions of space, and the environmental issue of sustainable development.

Scientific Progress

1. The Aim of This Essay Ethical Egoism, the doctrine that, roughly speaking, one should promote one's own good, has been a live issue since the very beginnings of moral philosophy. Historically, it is the most widely held normative theory, and, next to Utilitarianism, it is the most intensely debated one. What is at stake in this debate is a fundamental question of ethics: 'Is there any reason, except self-interest, for considering the interests of other people?' The ethical egoist answers No to this question, thus rejecting the received conception of morality. Is Ethical Egoism an acceptable position? There are many forms of Ethical Egoism, and each may be interpreted in several different ways. So the relevant question is rather, 'Is there an acceptable version of Ethical It is the main aim of this essay to answer this question. This Egoism?' means that I will be confronted with many other controversial questions, for example, 'What is a moral principle?', 'Is value objective or subjec tive?', 'What is the nature of the self?' For the acceptability of most ver sions of Ethical Egoism, it has been alleged, depends on what answers are given to questions such as these. (I will show that in some of these cases there is in fact no such dependence.) It is, of course, impossible to ad equately discuss all these questions within the compass of my essay.

Self and Others

Wittgenstein's philosophy is a puzzling subject mainly because Wittgenstein himself does not appear to have given a full, explicit account of what he means by his 'phenomenology', 'phenomenological language' or 'phenomenological problems'. This book examines the idea of phenomenology throughout the different stages of Wittgenstein's philosophical development. The author argues that Wittgenstein's entire philosophical life was mainly concerned with what is immediately given in one's experience. Early interpretations of the phenomenological elements in Wittgenstein's philosophy usually emphasized the unique nature of his later work.

Phenomenological Aspects of Wittgenstein's Philosophy

This book is a collection of essays in honor of Paul Ziff written by his col leagues, students, and friends. Many of the authors address topics that Ziff has discussed in his writings: understanding, rules and regularities, proper names, the feelings of machines, expression, and aesthetic experience. Paul Ziff began his professional career as an artist, went on to study painting with J. M. Hanson at Cornell, and then studied for the Ph. D. in philosophy, also at Cornell, with Max Black. Over the next three decades he produced a series of remarkable papers in philosophy of art, culminating in 1984 with the publica tion of Antiaesthetics: An Appreciation of the Cow with the Subtile Nose. In 1960 he published Semantic Analysis, his masterwork in philosophy of lan guage. Throughout his career he made important contributions to philosophy of mind in such papers as "The Simplicity of Other Minds" (1965) and "About Behaviourism" (1958). In addition to his work in these areas, his lec tures at Harvard on philosophy of religion are an underground classic; and throughout his career he has continued to make art and to search for the meaning of life in the properties of prime numbers. Although his interests are wide and deep, questions about language, art, and mind have dominated his philosophical work, and it is problems in these areas that provide the topics of most of the essays in this volume.

Relativism Refuted

The general treatment of problems connected with the causal conditioning of phenomena has tradition-ally been the domain of philosophy, but when one examines the relationships taking place in the various fields, the study of such conditionings belongs to the empirical sciences. Sociology is no exception in that respect. In that discipline we note a certain paradox. Many problems connected with the causal conditioning of phenomena have been raised in sociology in relatively recent times, and that process marked its empirical or even so-called empiricist trend. That trend, labelled positivist, seems in this case to be in contradiction with a certain type of positivism. Those authors who describe positivism usually include the Humean tradition in its genealogy and, remembering Hume's criticism of the concept of cause, speak about positivism as about a trend which is inclined to treat lightly the study of causes and confines itself to the statements on co-occurrence of phenomena.

Language, Mind, and Art

Our Greek colleagues, in Greece and abroad, must know (indeed they do know) how pleasant it is to recognize the renaissance of the philosophy of science among them with this fine collection. Classical and modern, technical and humane, historical and logical, admirably original and respectfully

traditional, these essays will deserve close study by philosophical readers throughout the world. Classical scholars and historians of science likewise will be stimulated, and the historians of ancient as well as modern philosophers too. Reviewers might note one or more of the contributions as of special interest, or as subject to critical wrestling (that ancient tribute); we will simply congratulate Pantelis Nicolacopoulos for assembling the essays and presenting the book, and we thank the contributors for their works and for their happy agreement to let their writings appear in this book. R. S. C. xi INTRODUCTORY REMARKS Neither philosophy nor science is new to Greece, but philosophy of science is. There are broader (socio-historical) and more specific (academic) reasons that explain, to a satisfactory degree, both the under-development of philosophy and history of science in Greece until recently and its recent development to international standards. It is, perhaps, not easy to have in mind the fact that the modem Greek State is only 160 years old (during quite a period of which it was consider ably smaller than it is today, its present territory having been settled after World War II).

Causality in Sociological Research

Though the subject of this work, "nominalism and contemporary nom inalism\

Greek Studies in the Philosophy and History of Science

The subject of Time has a wide intellectual appeal across different dis ciplines. This has shown in the variety of reactions received from readers of the first edition of the present Book. Many have reacted to issues raised in its philosophical discussions, while some have even solved a number of the open technical questions raised in the logical elaboration of the latter. These results will be recorded below, at a more convenient place. In the seven years after the first publication, there have been some noticeable newer developments in the logical study of Time and temporal expressions. As far as Temporal Logic proper is concerned, it seems fair to say that these amount to an increase in coverage and sophistication, rather than further break-through innovation. In fact, perhaps the most significant sources of new activity have been the applied areas of Linguistics and Computer Science (including Artificial Intelligence), where many intriguing new ideas have appeared presenting further challenges to temporal logic. Now, since this Book has a rather tight composition, it would have been difficult to interpolate this new material without endangering intelligibility.

Nominalism and Contemporary Nominalism

This book has been a long time in the making. Other issues have taken me away from it from time to extended time. But I kept coming back to the problem of other minds. It has remained a great issue, it is much contested still, and it is, after all, elose to us all. I like believing that the time taken has deepened my understanding of the problem and how it is to be handled. Other people, some by disagreeing vehemently, have helped greatly. I mention in particular, Brian Ellis, Robert Fox, Graeme Marshali, Tim Oakley, Ray Pinkerton and Robert Young. Robert Pargetter argued with me, and kept insisting that I write this book. John Bigelow, Michael Bradley, Keith Campbell, Frank Jackson, and William Lycan assisted by reading an earlier version and providing valued comments. Frank Jackson has been specially helpful, not just on this topic. He can be blamed for initially causing me to take the analogical inference seriously. Tbe La Trobe Philosophy Department has been a good place to do philosophy. I am grateful to Suzanne Hayster, Sandra Paul, and Betty Pritchard for struggling at various times with various recalcitrant manuscripts. Most particularly I thank Gai Larkin. She has seen the project through, with considerably more than efficiency.

The Logic of Time

Gertrudis Van de Vijver· Seminar of Logic and Epistemology University of Ghent Before being classified under the fashionable denominators of complexity and chaos, self-organization and autonomy were intensely inquired into in the cybernetic tradition. Despite all rejections that cybernetics has gone through in the second half of this century, today its importance is more and more recognized. Its decisive influence for connectionist theories, autopoietic and constructivist theories, for different forms of applied or experimental epistemology, is being more and more understood and generally accepted. It is mainly due to the success of connectionist models that we observe today a revival of interest for cybernetics. The 1943 article by McCulloch and Pitts is evidently a founding article. Cybernetics has however a much broader interest than the one linked to technical-mathematical details relevant to the construction of networks. For instance, the evolution from first to second order cybernetics, the ways of approaching biological and cognitive phenomena in the latter and the limits that were formulated there,

are particularly meaningful to understand current developments and divergences in connectionism. A nuanced picture of cybernetic's history and its present state is therefore clearly epistemologically essential.

Other Minds

Scientific research is viewed as a deliberate activity and the logic of discovery consists of strategies and arguments whereby the best objectives (questions) and optimal means for achieving these objectives (heuristics) are chosen. This book includes a discussion and some proposals regarding the way the logic of questions can be applied to understanding scientific research and draws upon work in artificial intelligence in a discussion of heuristics and methods for appraising heuristics (metaheuristics). It also includes a discussion of a third source for scientific objectives and heuristics; episodes and examplars from the history of science and the history of philosophy. This book is written to be accessible to advanced students in philosophy and to the scientific community. It is of interest to philosophers of science, philosophers of biology, historians of physics, and historians of biology.

New Perspectives on Cybernetics

Quantifiers: Logics, Models and Computation is the first concentrated effort to give a systematic presentation of the main research results on the subject, since the modern concept was formulated in the late '50s and early '60s. The majority of the papers are in the nature of a handbook. All of them are self-contained, at various levels of difficulty. The Introduction surveys the main ideas and problems encountered in the logical investigation of quantifiers. The Prologue, written by Per Lindström, presents the early history of the concept of generalised quantifiers. The volume then continues with a series of papers surveying various research areas, particularly those that are of current interest. Together they provide introductions to the subject from the points of view of mathematics, linguistics, and theoretical computer science. The present volume has been prepared in parallel with Quantifiers: Logics, Models and Computation, Volume Two. Contributions, which contains a collection of research papers on the subject in areas that are too fresh to be summarised. The two volumes are complementary. For logicians, mathematicians, philosophers, linguists and computer scientists. Suitable as a text for advanced undergraduate and graduate specialised courses in logic.

The Logic of Discovery

Since their appearance in the late 19th century, the Cantor--Dedekind theory of real numbers and philosophy of the continuum have emerged as pillars of standard mathematical philosophy. On the other hand, this period also witnessed the emergence of a variety of alternative theories of real numbers and corresponding theories of continua, as well as non-Archimedean geometry, non-standard analysis, and a number of important generalizations of the system of real numbers, some of which have been described as arithmetic continua of one type or another. With the exception of E.W. Hobson's essay, which is concerned with the ideas of Cantor and Dedekind and their reception at the turn of the century, the papers in the present collection are either concerned with or are contributions to, the latter groups of studies. All the contributors are outstanding authorities in their respective fields, and the essays, which are directed to historians and philosophers of mathematics as well as to mathematicians who are concerned with the foundations of their subject, are preceded by a lengthy historical introduction.

Quantifiers: Logics, Models and Computation

In Representational Ideas: From Plato to Patricia Churchland Watson argues that all intelligible theories of representation by ideas are based on likeness between representations and objects. He concludes that 17th century materialist criticisms of `having' mental representations in the mind apply to contemporary material representations in the brain, as proposed by neurophilosophers. The argument begins with Plato, with particular stress on Descartes, Malebranche, and Arnauld. He then proceeds with an examination of the picture theory developed by Wittgenstein, Carnap, and Goodman, and concludes with an examination of Patricia Churchland, Ruth Millikan, Robert Cummins, and Mark Rollins. The use of the historical development of representationalism to pose a central problem in contemporary cognitive science is unique. For students, scholars and researchers in neuroscience, cognitive science, philosophy of mind, and modern philosophy.

Real Numbers, Generalizations of the Reals, and Theories of Continua

Prior's view on intensionality and truth is based on the principle that sentences never name, that what sentences say cannot be otherwise signified, that a sentence says what it says whatever the type of its occurrence, and that sentential quantification is neither eliminable, substitutional, nor referential. The text defends each of these principles.

Representational Ideas

This book is a selection from the articles that I have written over a period of more than twenty years. Since the focus of my research interests has shifted several times during this period, it would be difficult to identify a common theme for all the papers in the volume. Following the Swedish tradition, I therefore present this as a smörgåsbord of philosophical and cognitive issues that I have worked on. To create some order, I have organized the sixteen papers into five general sections: (1) Decision theory; (2) belief revision and nonmonotonic logic; (3) induction; (4) semantics and pragmatics; and (5) cognition and evolution. Having said this, I still think that there is a common theme to my work over the years: The dynamics of thought. My academic interests have all the time dealt with aspects of how different kinds of knowledge should be represented, and, in particular, how changes in knowledge will affect thinking. Hence the title of the book.

Intensionality and Truth

In this book, the author defends a unified externalists account of propositional attitudes and reference, and formalizes this view within possible world semantics. He establishes a link between philosophical analyses of intentionality and reference, and formal semantic theories of discourse representation and context change. The relation between belief change and the semantic analyses of conditional sentences and evidential (knowledge) and buletic (desire) propositional attitudes is discussed extensively.

The Dynamics of Thought

This volume collects some of the most significant papers of Arthur Pap. Pap’s work played an important role in the development of the analytic tradition. This goes beyond the merely historical fact of Pap’s influential views of dispositional and modal concepts. Pap's writings in philosophy of science, modality, and philosophy of mathematics provide insightful alternative perspectives on philosophical problems of current interest.

Attitudes and Changing Contexts

Theories about the ontological structure of the world have generally been described in informal, intuitive terms. This book offers an account of the general features and methodology of formal ontology. The book defends conceptual realism as the best system to adopt based on a logic of natural kinds. By formally reconstructing an intuitive, informal ontological scheme as a formal ontology we can better determine the consistency and adequacy of that scheme.

The Limits of Logical Empiricism

impossible triangle, after apprehension of the perceptively given mode of being of that 'object', the visual system assumes that all three sides touch on all three sides, whereas this happens on only one side. In fact, the sides touch only optically, because they are separate in depth. In Meinong's words, Penrose's triangle has been inserted in an 'objective', or in what we would today call a "cognitive schema". Re-examination of the Graz school's theory, as said, sheds light on several problems concerning the theory of perception, and, as Luccio points out in his contribution to this book, it helps to eliminate a number of over-simplistic commonplaces, such as the identification of the cognitivist notion of 'top down' with Wertheimer's 'von oben unten', and of 'bottom up' with his 'von unten nach oben'. In fact, neither Hochberg's and Gregory's 'concept-driven' perception nor Gibson's 'data-driven' perception coincide with the original conception of the Gestalt.

Formal Ontology and Conceptual Realism

Believing the wrong thing can have drastic consequences. The question of when a person is not only ill-guided, but genuinely at fault for holding a particular belief goes to the root of our understanding of such notions as criminal negligence and moral responsibility. This book explores the conditions under which someone may be deemed blameworthy for holding a particular belief, drawing on contemporary epistemology, ethics and legal scholarship.

Shapes of Forms

The impressive record of Italian philosophical research since the end of Fascism thirty-two years ago is shown in many fields: esthetics, social and" personal ethics, history and sociology of philosophy, and magnificently, perhaps above all, in logic, foundations of mathematics and the philosophY, methodology, and intellectual history ofthe empirical sciences. To our pleasure, Maria Luisa Dalla Chiara of the University of Florence gladly agreed to assemble a 'sampler' of recent Italian logical and analytical work on the philosophical foundations of mathematics and physics, along with a number of historical studies of epistemological and mathematical concepts. The twenty-five essays that form this volume will, we expect, encourage English-reading philosophers and scientists to seek further works by these authors and by their teachers, colleagues, and students; and, we hope, to look for those other Italian currents of thought in the philosophy of science for which points of departure are not wholly analytic, and which also deserve study and recognition in the world wide philosophical community. Of course, Italy has long been related to that world community in scien titlc matters.

Blameworthy Belief

Talking Wolves advances an analysis of Hobbes which takes language seriously (as seriously as Hobbes took it). It presents a reading of Hobbes's view of society at large, and political society in particular, through a comprehensive discussion based on, and intimately linked to, his philosophy of language. This philosophy, in turn, is seen in a new light as being a pragmatic theory of language in use, language in action.

Italian Studies in the Philosophy of Science

Why did the two most influential philosophers in the twentieth century, Ludwig Wittgenstein and Martin Heidegger, write in such a curious fashion that they confused a whole generation of disciples and created a cottage industry for a second generation in the interpretation of their works? Do those curious writing strategies have a philosophical signif icance? How does philosophical style reflect attitudes to society and politics or bear significance for the social sciences? Is politics one type of human activity among many other independent ones as the classical modem political theorists from Hobbes and Machiavelli onwards have thought, or is it part and parcel of all of the activities into which an animal that speaks enters? How could the latter be elucidated? If politics arises from legitimate disputes about meanings, what does this imply for current cultural debates? for the so-called social sciences? above all, for that cultural conversation which some consider to be the destiny of philosophy in the wake of the demise of foundationalism? These are a few of the most important questions which led me to the critical confrontation and reflections in the essays collected below.

Talking Wolves

Until recently, the philosophy and history of science proceeded in a separate way from the philosophy and history of technology, and indeed with respect to both science and technology, philosophical and historical inquiries were also following their separate ways. Now we see in the past quarter-century how the philosophy of science has been profoundly in fluenced by historical studies of the sciences, and no longer concerned so single-mindedly with the analysis of theory and explanation, with the re lation between hypotheses and experimental observation. Now also we see the traditional historical studies of technology supplemented by phi losophical questions, and no longer so plainly focussed upon contexts of application, on invention and practical engineering, and on the mutually stimulating relations between technology and society. Further, alas, the neat division of intellectual labor, those clearly drawn distinctions be tween science and technology, between the theoretical and the applied, between discovery and justification, between internalist and externalist approaches . . . all, all have become muddled! Partly, this is due to internal revolutions within the philosophy and his tory of science (the first result being recognition of their mutual rele vance). Partly, however, this state of 'muddle' is due

to external factors: science, at the least in the last half-century, has become so intimately connected with technology, and technological developments have cre ated so many new fields of scientific (and philosophical) inquiry that any critical reflection on scientific and technological endeavors must hence forth take their interaction into account.

Style, Politics and the Future of Philosophy

In Theoretical Knowledge an original conception of a structure and dynamics of scientific knowledge is proposed. A detailed analysis of the foundations of science performed by the author allowed him to develop new ideas and approaches, to demonstrate how sociocultural factors are incorporated in the process of yielding of new theories. He shows direct and inverse links between foundations of science and new theories and empirical facts evolved from those, how among many potentially possible histories of science a culture selects just those directions which become a real history of science. The author analyses mechanisms of the generation of scientific theories and shows that those are changed in the process of historical development of science. He displays three historical types of scientific rationality (classical, non-classical and post-non-classical, which appears in modern science) and shows features of their coexistence and interplay. It is shown that along with the emerging of post-non-classical rationality science increases the sphere of its worldview applications. Science begins to correlate not only with the basic values of technogenic civilization but also with some values and patterns of traditional cultures. The investigation is based on the extensive literature on the history of natural and social sciences. The reader will find in the book authentic historical reconstructions of the processes of the development of classical and quantum electrodynamics, relativity, and conceptions of evolution in biology.

Philosophy and Technology II

DOES DISCOURSE HAVE A 'STRUCTURE'? HARRIS'S REVOLUTION IN LINGUISTICS As a fresh-man back in 1947 I discovered that within the various academic divisions and subdivisions of the University of Pennsylvania there existed a something (it was not a Department, but a piece of the Anthropology Department) called 'Linguistic Analysis'. I was an untalented but enthusiastic student of Greek and a slightly more talented student of German, as well as the son of a translator, so the idea of 'Linguistic Analysis' attracted me, sight unseen, and I signed up for a course. It turned out that 'Linguistic Analysis' was essentially a graduate program - I and another undergraduate called Noam Chomsky were the only two undergraduates who took courses in Linguistic Analysis - and also that it was essentially a one-man show: a professor named Zellig Harris taught all the courses with the aid of graduate Teaching Fellows (and possibly - I am not sure - one Assistant Professor). The technicalities of Linguistic Analysis were formidable, and I never did master them all. But the powerful intellect and personality of Zellig Harris drew me like a lodestone, and, although I majored in Philosophy, I took every course there was to take in Linguistic Analysis from then until my gradua tion. What 'Linguistics' was like before Zellig Harris is something not many people care to remember today.

Theoretical Knowledge

Natural Sciences and the Social Sciences contains a series of explorations of the different ways in which the social sciences have interacted with the natural sciences. Usually, such interactions are considered to go only `one way': from the natural to the social sciences. But there are several important essays in this volume which show how developments in the social sciences have affected the natural sciences - even the `hard' science of physics. Other essays deal with various types of interaction since the Scientific Revolution. In his general introductory chapter, Cohen sets some general themes concerning analogies and homologies and the use of metaphors, drawing specific examples from the use of concepts of physics by marginalist economists and of developments in the life sciences by organismic sociologists. The remaining chapters, which explore the different ways in which the social sciences and the natural sciences have actually interacted, are written by leaders in the field of history of science, drawn from a wide range of countries and disciplines. The book will be of great interest to all historians of science, philosophers interested in questions of methodology, economists and sociologists, and all social scientists concerned with the history of their subject and its foundations.

The Form of Information in Science

Friedrich Rapp, in this magisterial and critical essay on technology, the complex human phenomenon that demands philosophy of science, philosophy of culture, moral insight, and historical sensi tivity for

its understanding, writes modestly of the grave and ten tative situation in the philosophy of technology. Despite the pro found thinkers who have devoted time and imagination and ratio nal penetration, despite the massive literature now available, the varied and comparative viewpoints of political, analytic, despite metaphysical, cultural, even esthetic commitments, indeed despite the honest joining of historical and systematic methods of inves tigation, we are far from a satisfactory understanding of the joys and sorrows, the achievements and disappointments, of the tech nological saga of human societies. Professor Rapp has prepared this report on the philosophical understanding of technology for a troubled world; if ever philosophy were needed, it is in the prac tical attempt to find alternatives among technologies, to foresee dangers and opportunities, to choose with a sense of the possibil ity of fulfilling humane values. Emerson spoke of the scholar not as a specialist apart, but as 'Man thinking' and Rapp's essay so speaks to all of us, industrial world or third world, engineers or humanists, tired or energetic, fearful or optimistic.

The Natural Sciences and the Social Sciences

This book has grown out of eight years of close collaboration among its authors. From the very beginning we decided that its content should come out as the result of a truly common effort. That is, we did not "distribute" parts of the text planned to each one of us. On the contrary, we made a point that each single paragraph be the product of a common reflection. Genuine team-work is not as usual in philosophy as it is in other academic disciplines. We think, however, that this is more due to the idiosyncrasy of philosophers than to the nature of their subject. Close collaboration with positive results is as rewarding as anything can be, but it may also prove to be quite difficult to implement. In our case, part of the difficulties came from purely geographic separation. This caused unsuspected delays in coordinating the work. But more than this, as time passed, the accumulation of particular results and ideas outran our ability to fit them into an organic unity. Different styles of exposition, different ways of formalization, different levels of complexity were simultaneously present in a voluminous manuscript that had become completely unmanageable. In particular, a portion of the text had been conceived in the language of category theory and employed ideas of a rather abstract nature, while another part was expounded in the more conventional set-theoretic style, stressing intui tivity and concreteness.

Analytical Philosophy of Technology

of him in like measure within myself, that is my highest wish. This noble individual was not conscious of the fact that at that very moment the divine within him and the divine of the universe were most intimately united. So, for Goethe, the resonance with a natural rationality seems part of the genius of modern science. Einstein's 'cosmic religion', which reflects Spinoza, also echoes Goethe's remark (Ibid. , Item 575 from 1829): Man must cling to the belief that the incomprehensible is comprehensible. Else he would give up investigating. But how far will Goethe share the devotion of these cosmic rationalists to the beautiful harmonies of mathematics, so distant from any pure and 'direct observation'? Kepler, Spinoza, Einstein need not, and would not, rest with discovery of a pattern within, behind, as a source of, the phenomenal world, and they would not let even the most profound of descriptive generalities satisfy scientific curiosity. For his part, Goethe sought fundamental archetypes, as in his intuition of a Urpjlanze, basic to all plants, infinitely plastic. When such would be found, Goethe would be content, for (as he said to Eckermann, Feb. 18, 1829): . . . to seek something behind (the Urphaenomenon) is futile. Here is the limit. But as a rule men are not satisfied to behold an Urphaenomenon. They think there must be something beyond. They are like children who, having looked into a mirror, turn it around to see what is on the other side.

An Architectonic for Science

Goethe and the Sciences: A Reappraisal