

Philosophy And Logical Syntax

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What is the source of logical and mathematical truth? This volume revitalizes conventionalism as an answer to this question. Conventionalism takes logical and mathematical truth to have their source in linguistic conventions. This was an extremely popular view in the early 20th century, but it was never worked out in detail and is now almost universally rejected in mainstream philosophical circles. In *Shadows of Syntax*, Jared Warren offers the first book-length treatment and defense of a combined conventionalist theory of logic and mathematics. He argues that our conventions, in the form of syntactic rules of language use, are perfectly suited to explain the truth, necessity, and a priority of logical and mathematical claims. In Part I, Warren explains exactly what conventionalism amounts to and what linguistic conventions are. Part II develops an unrestricted inferentialist theory of the meanings of logical constants that leads to logical conventionalism. This conventionalist theory is elaborated in discussions of logical pluralism, the epistemology of logic, and of the influential objections that led to the historical demise of conventionalism. Part III aims to extend conventionalism from logic to mathematics. Unlike

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logic, mathematics involves both ontological commitments and a rich notion of truth that cannot be generated by any algorithmic process. To address these issues Warren develops conventionalist-friendly but independently plausible theories of both metaontology and mathematical truth. Finally, Part IV steps back to address big picture worries and meta-worries about conventionalism. This book develops and defends a unified theory of logic and mathematics according to which logical and mathematical truths are reflections of our linguistic rules, mere shadows of syntax. *An Invitation to Formal Reasoning* introduces the discipline of formal logic by means of a powerful new system formulated by Fred Sommers. This system, term logic, is different in a number of ways from the standard system employed in modern logic; most striking is its greater simplicity and naturalness. Based on a radically different theory of logical syntax than the one Frege used when initiating modern mathematical logic in the 19th Century, term logic borrows insights from Aristotle's syllogistic, Scholastic logicians, Leibniz, and the 19th century British algebraists. Term logic takes its syntax directly from natural language, construing statements as combinations of pairs of terms, where complex terms are taken to have the same syntax as statements. Whereas standard logic requires extensive 'translation' from natural language to symbolic language, term logic requires only 'transcription' into the symbolic language. Its

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naturalness is the result of its ability to stay close to the forms of sentences usually found in every day discourse. Written by the founders of the term logic approach, *An Invitation to Formal Reasoning* is a unique introduction and exploration of this new system, offering numerous exercises and examples throughout the text. Summarising the standard system of mathematical logic to set term logic in context, and showing how the two systems compare, this book presents an alternative approach to standard modern logic for those studying formal logic, philosophy of language or computer theory. Fred Sommers is Professor Emeritus, Brandeis University, USA; George Englebretsen is Professor of Philosophy, Bishop's University, Canada.

The main purpose of this volume is to demonstrate several significant distinctions between the predicate calculus and natural language, distinctions that make the former inadequate for the study of the semantics and logic of the latter.

Re-examining the Roots and Development of Analytic Philosophy

Explication as Enlightenment

The Logical Syntax of Language

An Invitation to Formal Reasoning

The Logical Structure of the World

An Introduction to Its Syntax and Semantics

"This book is valuable as expounding in full a theory of meaning that has its roots in the work of Frege and has been of the widest influence. . . . The chief virtue of the book is

its systematic character. From Frege to Quine most philosophical logicians have restricted themselves by piecemeal and local assaults on the problems involved. The book is marked by a genial tolerance.

Carnap sees himself as proposing conventions rather than asserting truths. However he provides plenty of matter for argument."-Anthony Quinton, *Hibbert*

Journal

Philosophy and Logical Syntax Thoemmes Press

Rudolf Carnap (1891-1970) is widely regarded as one of the most important philosophers of the twentieth century. Born in Germany and later a US citizen, he was a founder of the philosophical movement known as Logical Empiricism. He was strongly influenced by a number of different philosophical traditions (including the legacies of both Kant and Husserl), and also by the German Youth Movement, the First World War (in which he was wounded and decorated), and radical socialism. This book places his central ideas in a broad cultural, political and intellectual context, showing how he synthesised many different currents of thought to achieve a philosophical perspective that remains strikingly relevant in the twenty-first century. Its rich account of a philosopher's response to his times will

appeal to all who are interested in the development of philosophy in the twentieth century.

"This is a significant and often rather demanding collection of essays. It is an anthology putting together the uncollected works of an important twentieth-century philosopher. Many of the articles treat one or another of the more important issues considered by analytic philosophers during the last quarter-century. Of significant importance to philosophers interested in researching the many topics contained in Logic Matters is the inclusion in this anthology of a rather extensive eight-page name-topic index."--Thomist "The papers are arranged by topic: Historical Essays, Traditional Logic, Theory of Reference and Syntax, Intentionality, Quotation and Semantics, Set Theory, Identity Theory, Assertion, Imperatives and Practical Reasoning, Logic in Metaphysics and Theology. The broad range of issues that have engaged Geach's complex and systematic reasoning is impressive. In addition to classical logic, topics in ethics, ontology, and even the logic of religious dogmas are tackled the work in this collection is more brilliant and ingenious than it is difficult and demanding."--Philosophy of Science "Geach

displays his mastery of applying logical techniques and concepts to philosophical questions. Compared with most works in philosophical logic this book is remarkable for its range of topics. Plato, Aristotle, Aquinas, Russell, Wittgenstein, and Quine all figure prominently. Geach's style is remarkably lively considering the rightly argued matter. Although some of the articles treat rather technical questions in mathematical logic, most are accessible to philosophers with modest backgrounds in logic." --Choice

**The Logical Approach to Syntax
Introduction to Symbolic Logic and Its
Applications**

**Schlick, Carnap, and Neurath
Logic Matters**

**Meaning and Necessity - A Study in
Semantics and Modal Logic**

Logical Empiricism at Its Peak

Logical consequence is the relation that obtains between premises and conclusion(s) in a valid argument.

Orthodoxy has it that valid arguments are necessarily truth-preserving, but this platitude only raises a number of further questions, such as: how does the truth of premises guarantee the truth of a conclusion, and what constraints does validity impose on rational belief? This volume presents thirteen essays by some of the most important scholars in the field of philosophical logic. The essays offer ground-breaking new insights into the nature of logical

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consequence; the relation between logic and inference; how the semantics and pragmatics of natural language bear on logic; the relativity of logic; and the structural properties of the consequence relation.

Clear, comprehensive, and rigorous treatment develops the subject from elementary concepts to the construction and analysis of relatively complex logical languages.

Hundreds of problems, examples, and exercises. 1958 edition.

Brimming with visual examples of concepts, derivation rules, and proof strategies, this introductory text is ideal for students with no previous experience in logic. Students will learn translation both from formal language into English and from English into formal language; how to use truth trees and truth tables to test propositions for logical properties; and how to construct and strategically use derivation rules in proofs.

Available for the first time in 20 years, here is the Rudolf Carnap's famous "principle of tolerance" by which everyone is free to mix and match the rules of language and logic. In *The Logical Syntax of Language*, Carnap explains how his entire theory of language structure came to him like a vision when he was ill. He postulates that concepts of the theory of logic are purely syntactical and therefore can be formulated in logical syntax.

Philosophy of Logic

The Problem of Meaning Considered as the Logical Syntax of Language in Recent Philosophical Discussion

Alfred Tarski: Philosophy of Language and Logic

And, Pseudoproblems in Philosophy

Two Essays on Entropy

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Available for the first time in 20 years, here are two important works from the 1920s by the best-known representative of the Vienna Circle. In *The Logical Structure of the World*, Carnap adopts the position of "methodological solipsism" and shows that it is possible to describe the world from the immediate data of experience. In his *Pseudoproblems in Philosophy*, he asserts that many philosophical problems are meaningless. This title is part of UC Press's Voices Revived program, which commemorates University of California Press's mission to seek out and cultivate the brightest minds and give them voice, reach, and impact. Drawing on a backlist dating to 1893, Voices Revived makes high-quality, peer-reviewed scholarship accessible once again using print-on-demand technology. This title was originally published in 1977.

This reissue, first published in 1971, provides a brief historical account of the Theory of Logical Types; and describes the problems that gave rise to it, its various different formulations (Simple and Ramified), the difficulties connected with each, and the criticisms that have been directed against it.

This volume contains newly-commissioned articles covering the development of modern logic from the late medieval period (fourteenth

century) through the end of the twentieth-century. It is the first volume to discuss the field with this breadth of coverage and depth. It will appeal to scholars and students of philosophical logic and the philosophy of logic.

Empiricism and Logical Syntax

Symbolic Logic

An Introduction to the Philosophy of Science

Carnap and the Vienna Circle

Foundations of Logical Consequence

Logic & Natural Language

This book proposes an original treatment of quantification, and it formulates insightful general principles of syntactic analysis. Its main message is that categorical grammar is the most plausible framework for logical syntax of natural language.

This book explores the major themes of Carnap's philosophy and discusses his relationship with the Vienna Circle.

Major figures of twentieth-century philosophy were enthralled by the revolution in formal logic, and many of their arguments are based on novel mathematical discoveries. Hilary Putnam claimed that the Lwenheim-Sklem theorem refutes the existence of an objective, observer-independent world; Bas van Fraassen claimed that arguments against empiricism in philosophy of science are ineffective against a semantic approach to scientific theories; W. V. O. Quine claimed that the distinction between analytic and synthetic truths is trivialized by the fact that any theory can be reduced to

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one in which all truths are analytic. This book dissects these and other arguments through in-depth investigation of the mathematical facts undergirding them. It presents a systematic, mathematically rigorous account of the key notions arising from such debates, including theory, equivalence, translation, reduction, and model. The result is a far-reaching reconceptualization of the role of formal methods in answering philosophical questions.

Based on the belief that statements are meaningful only if they are empirically verifiable, in *The Unity of Science* Carnap endeavours to work out a way in which the observation statements required for verification are not private to the observer. The work shows the strong influence of Wittgenstein, Russell and Frege. This, the first English translation, was revised by Carnap for this edition.

Studies in Inductive Logic and Probability

Logical syntax of language

A Study in Semantics and Modal Logic

Logical Syntax of Language

The Theory of Logical Types (Routledge Revivals)

The aim of this monograph is to describe Greek mathematics as a literary product, studying its style from a logico-syntactic point of view and setting parallels with logical and grammatical doctrines developed in antiquity. In this way, major philosophical themes such as the expression of mathematical generality and the selection of criteria

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of validity for arguments can be treated without anachronism. Thus, the book is of interest for both historians of ancient philosophy and specialists in Ancient Greek, in addition to historians of mathematics. This volume is divided into five parts, ordered in decreasing size of the linguistic units involved. The first part describes the three stylistic codes of Greek mathematics; the second expounds in detail the mechanism of "validation"; the third deals with the status of mathematical objects and the problem of mathematical generality; the fourth analyzes the main features of the "deductive machine," i.e. the suprasentential logical system dictated by the traditional division of a mathematical proposition into enunciation, setting-out, construction, and proof; and the fifth deals with the sentential logical system of a mathematical proposition, with special emphasis on quantification, modalities, and connectors. A number of complementary appendices are included as well. 'My endeavour in these pages is to explain the main features of the method of philosophizing which we, the Vienna Circle, use, and by using try to develop further. It is the method of the logical analysis of science, or more precisely, of the syntactical analysis of scientific language.... The purpose of the book -- as of the lectures -- is to give a first impression of our method and of the direction of our questions and investigations to those who are not

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yet acquainted with them.' -- From the Preface.
A basic system of inductive logic; An axiomatic foundation for the logic of inductive generalization; A survey of inductive systems; On the condition of partial exchangeability; Representation theorems of the de finetti type; De finetti's generalizations of exchangeability; The structure of probabilities defined on first-order languages; A subjectivist's guide to objective chance.

It is not inaccurate to say that from 1928 to 1936 Carnap was a member of the Vienna Circle, even though during this period he was not always present in Vienna. During this years, which spanned roughly the period from the *Aufbau* to *Testability and Meaning*, he worked or at least discussed frequently with the members of the group. However, traditionally it has been difficult to form a proper view of the development of Carnap's ideas throughout this period, mainly because of three errors which have persisted in the commonly accepted historical interpretation of Carnap and the Vienna Circle: emphasis on the Circle as a unit rather than a collective of individuals; insistence on verificationism as the defining characteristic of Logical Positivism; and the systematic abstraction of the work of the Circle from its historical context. As against this historically distorted image, this book argues for an alternative reading, evaluating the different influences on Carnap of Schlick, Wittgenstein,

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Neurath and Popper, and making sense of Carnap's evolution from physicalism to phenomenalism and the syntactic point of view.

The Logic of Terms

Foundations, Specifications, and Implementations of Theories of Government and Binding

Revitalizing Logical and Mathematical Conventionalism

Philosophical Foundations of Physics

Shadows of Syntax

Modal Logic

Since 1970-ties in the theory of syntax of natural language quite a number of competing, incommensurable theoretic frameworks have emerged. Today the lack of a leading paradigm and kaleidoscope of perspectives deprives our general understanding of syntax and its relation to semantics and pragmatics. The present book is an attempt to reestablish the most fundamental ideas and intuitions of syntactic well-formedness within a new general account. The account is not supposed to compete with any of today's syntactic frameworks, but to provide a deeper understanding of why these frameworks succeed or fail when they do and to show a new way for cooperation between logicians and linguists which may lead in future to a unified, yet more specific account.

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As a leading member of the Vienna Circle, Rudolph Carnap's aim was to bring about a "unified science" by applying a method of logical analysis to the empirical data of all the sciences. This work, first published in

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English in 1934, endeavors to work out a way in which the observation statements required for verification are not private to the observer. The work shows the strong influence of Wittgenstein, Russell, and Frege.

This study looks to the work of Tarski's mentors Stanislaw Lesniewski and Tadeusz Kotarbinski, and reconsiders all of the major issues in Tarski scholarship in light of the conception of Intuitionistic Formalism developed: semantics, truth, paradox, logical consequence.

Wittgenstein on Logic as the Method of Philosophy

The Development of Modern Logic

Philosophy of Syntax

Foundational Topics

An Examination of Logical Positivism

The Logical Syntax of Greek Mathematics

The main purpose of this book is the development of a new method for the semantical analysis of meaning, that is, a new method for analyzing and describing the meanings of linguistic expressions. This method, called the method of extension and intension, is developed by modifying and extending certain customary concepts, especially those of class and property. The method will be contrasted with various other semantical methods used in traditional philosophy or by contemporary authors. These other methods have one characteristic in common. They all regard an expression in a language as a name of a concrete or abstract entity. In contradistinction, the method here proposed takes an expression, not as naming anything, but as possessing an intension and an extension. Many of the earliest books, particularly those dating back to the 1900s and before, are now extremely scarce and increasingly expensive. We are republishing these classic works in affordable, high quality, modern editions, using the original text and artwork. By formalizing recent syntactic theories for natural languages Stabler shows how their complexity can be handled without

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guesswork or oversimplification. By formalizing recent syntactic theories for natural languages in the tradition of Chomsky's *Barriers*, Stabler shows how their complexity can be handled without guesswork or oversimplification. He introduces logical representations of these theories together with special deductive techniques for exploring their consequences that will provide linguists with a valuable tool for deriving and testing theoretical predictions and for experimenting with alternative formulations of grammatical principles. Stabler's novel approach allows results to be deduced with straightforward calculations and provides a systematic framework for tackling the problem of how speakers can infer the properties of an utterance from principles of the grammar. The special treatment of equality, induction principles, and inclusion of a general method for collecting structures from proofs means that sophisticated linguistic arguments can be carried out in detail, giving a rich perspective to issues in linguistic theory and parsing.

The papers presented in this volume examine topics of central interest in contemporary philosophy of logic. They include reflections on the nature of logic and its relevance for philosophy today, and explore in depth developments in informal logic and the relation of informal to symbolic logic, mathematical metatheory and the limiting metatheorems, modal logic, many-valued logic, relevance and paraconsistent logic, free logics, extensional v. intensional logics, the logic of fiction, epistemic logic, formal logical and semantic paradoxes, the concept of truth, the formal theory of entailment, objectual and substitutional interpretation of the quantifiers, infinity and domain constraints, the Löwenheim-Skolem theorem and Skolem paradox, vagueness, modal realism v. actualism, counterfactuals and the logic of causation, applications of logic and mathematics to the physical sciences, logically possible worlds and counterpart semantics, and the legacy of Hilbert's program and logicism. The handbook is meant to be both a compendium of new work in symbolic logic and an authoritative

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resource for students and researchers, a book to be consulted for specific information about recent developments in logic and to be read with pleasure for its technical acumen and philosophical insights. - Written by leading logicians and philosophers - Comprehensive authoritative coverage of all major areas of contemporary research in symbolic logic - Clear, in-depth expositions of technical detail - Progressive organization from general considerations to informal to symbolic logic to nonclassical logics - Presents current work in symbolic logic within a unified framework - Accessible to students, engaging for experts and professionals - Insightful philosophical discussions of all aspects of logic - Useful bibliographies in every chapter

This volume's aim is to provide an introduction to Carnap's book from a historical and philosophical perspective, each chapter focusing on one specific issue. The book will be of interest not only to Carnap scholars but to all those interested in the history of analytical philosophy.

Meaning and Necessity

The Cambridge Companion to Carnap

The Logic in Philosophy of Science

Logical Syntax and the Limits of Sense in the Philosophy of Frege and Wittgenstein

Syntax, Semantics, and Proof

On Plural Reference and Its Semantic and Logical Significance

In this text, a variety of modal logics at the sentential, first-order, and second-order levels are developed with clarity, precision and philosophical insight. All of the S1-S5 modal logics of Lewis and Langford, among others, are constructed. A matrix, or many-valued semantics, for sentential modal logic is formalized, and

an important result that no finite matrix can characterize any of the standard modal logics is proven. Exercises, some of which show independence results, help to develop logical skills. A separate sentential modal logic of logical necessity in logical atomism is also constructed and shown to be complete and decidable. On the first-order level of the logic of logical necessity, the modal thesis of anti-essentialism is valid and every de re sentence is provably equivalent to a de dicto sentence. An elegant extension of the standard sentential modal logics into several first-order modal logics is developed. Both a first-order modal logic for possibilism containing actualism as a proper part as well as a separate modal logic for actualism alone are constructed for a variety of modal systems. Exercises on this level show the connections between modal laws and quantifier logic regarding generalization into, or out of, modal contexts and the conditions required for the necessity of identity and non-identity. Two types of second-order modal logics, one possibilist and the other actualist, are developed based on a

distinction between existence-entailing concepts and concepts in general. The result is a deeper second-order analysis of possibilism and actualism as ontological frameworks. Exercises regarding second-order predicate quantifiers clarify the distinction between existence-entailing concepts and concepts in general. Modal Logic is ideally suited as a core text for graduate and undergraduate courses in modal logic, and as supplementary reading in courses on mathematical logic, formal ontology, and artificial intelligence. In Wittgenstein on Logic as the Method of Philosophy, Oskari Kuusela examines Wittgenstein's early and late philosophies of logic, situating their philosophical significance in early and middle analytic philosophy with particular reference to Frege, Russell, Carnap, and Strawson. He argues that not only the early but also the later Wittgenstein sought to further develop the logical-philosophical approaches of his contemporaries. Throughout his career Wittgenstein's aim was to resolve problems with and address the limitations of Frege's and Russell's

accounts of logic and their logical methodologies so as to achieve the philosophical progress that originally motivated the logical-philosophical approach. By re-examining the roots and development of analytic philosophy, Kuusela seeks to open up covered up paths for the further development of analytic philosophy. Offering a novel interpretation of the philosopher, he explains how Wittgenstein extends logical methodology beyond calculus-based logical methods and how his novel account of the status of logic enables one to do justice to the complexity and richness of language use and thought while retaining rigour and ideals of logic such as simplicity and exactness. In addition, this volume outlines the new kind of non-empiricist naturalism developed in Wittgenstein's later work and explaining how his account of logic can be used to dissolve the long-standing methodological dispute between the ideal and ordinary language schools of analytic philosophy. It is of interest to scholars, researchers, and advance students of philosophy interested in engaging with a number of scholarly debates.

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***Carnap and Twentieth-Century Thought
Carnap's Logical Syntax of Language
The Unity of Science***