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Elements of Logic An Introduction to Logical Science Logically Fallacious Logic and Mr. Limbaugh Elements of Logic Elements of Logic The Logic of the Articles in Traditional Philosophy Vaccines Fatal Fallacies Dictionary of Logic as Applied in the Study of Language On Reasoning and Argument Elements of Logic An Illustrated Book of Bad Arguments: Learn the Lost Art of Making Sense (Bad Arguments) The Logic of the Articles in Traditional Philosophy Elementary Logic Elements of Logic Elements of Logic: Comprising the Substance of the Article in the Encyclopaedia Metropolitana Writing Your Journal Article in Twelve Weeks Elements of Logic Elements of Logic Elements of Logic The Fallacy Detective Elements of Logic Emotional The Structure of Aristotelian Logic Force of Logic Elements of Logic Elements of Logic The Logical Alien Ethics in Psychotherapy and Counseling A Short History of Logic Elements of Logic Exegetical Fallacies The Logic of Epistemology and the Epistemology of Logic The Semantic Conception of Logic The Boundary Stones of Thought Existence, Truth, and Probability Logical Form Euthanasia and Assisted Suicide Knowledge and Language

This is a reproduction of a book published before 1923. This book may have occasional imperfections such as missing or blurred pages, poor pictures, errant marks, etc. that were either part of the original artifact, or were introduced by the scanning process. We believe this work is culturally important, and despite the imperfections, have elected to bring it back into print as part of our continuing commitment to the preservation of printed works worldwide. We appreciate your understanding of the imperfections in the preservation process, and hope you enjoy this valuable book. We've all been told that thinking rationally is the key to success. But at the cutting edge of science, researchers are discovering that feeling is every bit as important as thinking. You make hundreds of decisions every day, from what to eat for breakfast to how you should invest, and not one of those decisions would be possible without emotion. It has long been said that thinking and feeling are separate and opposing forces in our behavior. But as Leonard Mlodinow, the best-selling author of Subliminal, tells us, extraordinary advances in psychology and neuroscience have proven that emotions are as critical to our well-being as thinking. How can you connect better with others? How can you make sense of your frustration, fear, and anxiety? What can you do to live a happier life? The answers lie in understanding your emotions. Journeying from the labs of pioneering scientists to real-world scenarios that have flirted with disaster, Mlodinow shows us how our emotions can help, why they sometimes hurt, and what we can learn in both instances. Using deep insights into our evolution and biology, Mlodinow gives us the tools to understand our emotions better and to maximize their benefits. Told with his characteristic clarity and fascinating stories, Emotional explores the new science of feelings and offers us an essential guide to making the most of one of nature's greatest gifts. In this book, a global panel of experts considers the international implications of legalised euthanasia based on experiences from Belgium. The Fallacy Detective has been the best selling text for teaching logical fallacies and introduction to logic for over 15 years. "Can learning logic be fun? With The Fallacy Detective it appears that it can be. I thoroughly enjoyed this book and would recommend it to anyone who wants to improve his reasoning skills."--Tim Challies, curriculum reviewer "Cartoon and comic illustrations, humorous examples, and a very reader-friendly writing style make this the sort of course students will enjoy."--Cathy Duffy, homeschool curriculum reviewer "I really like The Fallacy Detective because it has funny cartoons, silly stories, and teaches you a lot!"--11 Year Old What is a fallacy? A fallacy is an error in logic a place where someone has made a mistake in his thinking. This is a handy book for learning to spot common errors in reasoning. - For ages twelve through adult. - Fun to use -- learn skills you can use right away. - Peanuts, Dilbert, and Calvin and Hobbes cartoons. - Includes The Fallacy Detective Game. - Exercises with answer key. Originally published in 1914, this book presents an exposition of the elementary principles of logic. The text is divided into two main parts. The first part discusses the older system of logic, defined, in this context, as 'a carefully limited subject to get up for an elementary examination'. The second part discusses the modern system of logic, defined as 'a free study of some of the chief risks of error in reasoning'. Notes are incorporated throughout. This book will be of value to anyone with an interest in logic and philosophy. When the original Dutch version of this book was presented in 1971 to the University of Leiden as a thesis for the Doctorate in philosophy, I was prevented by the academic mores of that university from expressing my sincere thanks to three members of the Philosophical Faculty for their support of and interest in my pursuits. I take the liberty of doing so now, two and a half years later. First and foremost I want to thank Professor G. Nuchelmans warmly for his expert guidance of my research. A number of my most im portant sources were brought to my attention by him. During the whole process of composing this book his criticism and encouragement were carried out in a truly academic spirit. He thereby provided working conditions that are a sine qua non for every author who is attempting to approach controversial matters in a scientific manner, conditions which, however, were not easily available at that time. In a later phase I also came into contact with Professors L. M. de Rijk and J. B. Ubbink, with both of whom I had highly stimulating discussions and exchanges of ideas. The present edition contains some entirely new sections, viz. 1-9, IV-29, V-9, V-20, VII-14 (iii), (iv), VII-17 (i), VIII-22, IX-17, IX-19, X-9 and XI-8. Section X-9 was inspired by a remark made by Professor A. This book offers updated explanations of the sins of interpretation to teach sound grammatical, lexical, cultural, theological, and historical Bible study practices. "A must for teachers, pastors, and serious Bible students."--Journal of the Evangelical Theological Society This book brings together in one place David Hitchcock's most significant published articles on reasoning and argument. In seven new chapters he updates his thinking in the light of subsequent scholarship. Collectively, the papers articulate a distinctive position in the philosophy of argumentation. Among other things, the author:• develops an account of "material consequence" that permits evaluation of inferences without problematic postulation of unstated premises.• updates his recursive definition of argument that accommodates chaining and embedding of arguments and allows any type of illocutionary act to be a conclusion. • advances a general theory of relevance.• provides comprehensive frameworks for evaluating inferences in reasoning by analogy, means-end reasoning, and appeals to considerations or criteria.• argues that none of the forms of arguing ad hominem is a fallacy.• describes proven methods of teaching critical thinking effectively. The Boundary Stones of Thought seeks to defend classical logic from a number of attacks of a broadly anti-realist character. Ian Rumfitt is sympathetic to many of the premises underlying these attacks. Indeed, he regards some of them as effective challenges to certain principles of classical semantics, notably the Principle of Bivalence. He argues, though, that they are ineffective against classical logic itself. The book starts by considering the general problem of how conflicts over logical laws may be rationally discussed and adjudicated. This leads to a consideration of the nature of logic: Rumfitt identifies the particular features that mark out logical consequence from other consequence relations, and he advances a new argument for the ancient thesis that there is a modal element in the notion of logical consequence. He develops a theory of that modal element in terms of perhaps incomplete possibilities, rather than fully determinate possible worlds. Some prima facie powerful arguments against the validity of certain classical logical laws are then analysed in the light of this account of logic. Throughout, care is taken to separate lines of anti-classical argument that, although distinct, are often run together or confused. The analysis yields, as by-products, semantic theories for a number of problematical areas of discourse. These areas include our talk about sub-atomic particles, about the infinite, about infinitesimals, about sets, and vague discourse. Rumfitt concludes by defending his stance of accepting classical logic while rejecting Bivalence, against Aristotle's argument that a classical logician is committed to Bivalence. The ultimate aim is to liberate classical logic from the dead hand of classical semantics. Logical form has always been a prime

concern for philosophers belonging to the analytic tradition. For at least one century, the study of logical form has been widely adopted as a method of investigation, relying on its capacity to reveal the structure of thoughts or the constitution of facts. This book focuses on the very idea of logical form, which is directly relevant to any principled reflection on that method. Its central thesis is that there is no such thing as a correct answer to the question of what is logical form: two significantly different notions of logical form are needed to fulfill two major theoretical roles that pertain respectively to logic and to semantics. This thesis has a negative and a positive side. The negative side is that a deeply rooted presumption about logical form turns out to be overly optimistic: there is no unique notion of logical form that can play both roles. The positive side is that the distinction between two notions of logical form, once properly spelled out, sheds light on some fundamental issues concerning the relation between logic and language. I am very grateful to Kluwer Academic Publishers for the opportunity to republish these articles about knowledge and language. The Introduction to the volume has been written by James Logue, and I need to pay a very sincerely intended tribute to the care and professionalism which he has devoted to every feature of its production. My thanks are also due to Matthew MeG rattan for his technical as sistance in scanning the articles onto disk and formatting them. 1. Jonathan Cohen vii Publisher's Note Thanks are due to the following publishers for permission to reproduce the articles in this volume. On the project of a universal character. Oxford University Press. Paper 1 On a concept of a degree of grammaticalness. Logique et Analyse. Paper 2 Paper 3 The semantics of metaphor. Cambridge University Press. Paper 4 Can the logic of indirect discourse be formalised? The Association for Symbolic Logic. Paper 5 Some remarks on Grice's views about the logical particles of natural language. Kluwer Academic Publishers. Paper 6 Can the conversationalist hypothesis be defended? Kluwer Academic Publishers. Paper 7 How is conceptual innovation possible? Kluwer Academic Publishers. Should natural language definitions be insulated from, or interactive Paper 8 with, one another in sentence composition? Kluwer Academic Publish ers. Paper 9 A problem about truth-functional semantics. Basil Blackwell Publisher Ltd. Paper 10 The individuation of proper names. Oxford University Press. Paper 11 Some comments on third world epistemology. Oxford University Press. Paper 12 Guessing. The Aristotelian Society. Logic and Mr. Limbaugh is both an entertaining introduction to the elements of logic and a serious critique of the practical logic of a major conservative propagandist. Professor Perkins takes 50 examples of logical reasoning from Rush's statements, identifies the logical arguments, and points out fallacies. "This short book makes you smarter than 99% of the population. . . . The concepts within it will increase your company's 'organizational intelligence.'. . . It's more than just a must-read, it's a 'have-to-read-or-you're-fired' book."—Geoffrey James, INC.com From the author of An Illustrated Book of Loaded Language, here's the antidote to fuzzy thinking, with furry animals! Have you read (or stumbled into) one too many irrational online debates? Ali Almossawi certainly had, so he wrote An Illustrated Book of Bad Arguments! This handy guide is here to bring the internet age a much-needed dose of old-school logic (really old-school, a la Aristotle). Here are cogent explanations of the straw man fallacy, the slippery slope argument, the ad hominem attack, and other common attempts at reasoning that actually fall short—plus a beautifully drawn menagerie of animals who (adorably) commit every logical faux pas. Rabbit thinks a strange light in the sky must be a UFO because no one can prove otherwise (the appeal to ignorance). And Lion doesn't believe that gas emissions harm the planet because, if that were true, he wouldn't like the result (the argument from consequences). Once you learn to recognize these abuses of reason, they start to crop up everywhere from congressional debate to YouTube comments—which makes this geek-chic book a must for anyone in the habit of holding opinions. The ethics book no psychology student or professional should be without Thoroughly updated and expanded to include recent research findings, landmark legal decisions, the Hoffman Investigation Report, and changes in the ethical guidelines of the American Psychological Association and the Canadian Psychological Association, the new 5th edition of Ethics in Psychotherapy and Counseling covers the latest developments in ethical thinking, standards, and practice. You'll learn how to strengthen your ethical awareness, judgement, and decision-making. Distinguished Emeritus Professor Don Meichenbaum described the 5th edition as 'a MUST READ book for both beginning and seasoned clinicians' and Professor David H. Barlow wrote, 'A stunningly good book. . . . If there is only one book you buy on ethics, this is the one.' Covers the many changes and challenges brought about by new technology, EHRs, videoconferencing, and texting, as well as practicing across state and provincial borders Discusses moral distress and moral courage Includes 5 chapters on different aspects of critical thinking about ethical challenges, including a chapter on 'Ethics Placebos, Cons, and Creative Cheating: A User's Guide' Deals with complex issue of culture, race, religion, sexual identity, sexual orientation, and politics Provides steps to strengthen ethics in organizations Offers guidance on responding to ethics, licensing, and malpractice complaints—not to imply that you'll need to after reading this book! Keeps the focus on practical, creative approaches to the responsibilities, challenges, and opportunities encountered by therapists and counselors in their work. This book is a crash course in effective reasoning, meant to catapult you into a world where you start to see things how they really are, not how you think they are. The focus of this book is on logical fallacies, which loosely defined, are simply errors in reasoning. With the reading of each page, you can make significant improvements in the way you reason and make decisions. Logically Fallacious is one of the most comprehensive collections of logical fallacies with all original examples and easy to understand descriptions, perfect for educators, debaters, or anyone who wants to improve his or her reasoning skills. "Expose an irrational belief, keep a person rational for a day. Expose irrational thinking, keep a person rational for a lifetime." - Bo Bennett This 2021 Edition includes dozens of more logical fallacies with many updated examples. This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant. This book includes some of the most original and influential contributions to logic and the philosophy of logic during the past twenty years. It contains thirty-five essays, many of which started new trends in logic. For example, some of the essays in Part One gave birth to what is now known as free logic, and some of the essays in Part Two were among the earliest contributions to what is now known as truth-value semantics. The essays in Part Three are contributions to and improvements of already extant logics, such as intuitionistic logic, natural deduction, and the logic of sequents. Introductions to the parts of the book cover the history of the contributions and their importance. The essays have been thoroughly revised since their publication in learned journals. A SHORT HISTORY OF LOGIC by EGBERT ADAMSON. Originally published in 1911. PREFACE: THE article on Logic which Professor Adamson con tributed to the ninth edition of the Encyclopaedia Britannica consists of a critical survey of the his tory of logical theory its value is well known to philosophical students and no apology is needed to justify its publication in separate form. It may be mentioned, however, that this publication was thought to be important at the present time, as the work was in danger of becoming less easily accessible owing to the issue of the eleventh edition of the Encyclopaedia, in which it is not reprinted. The manuscript of the article has been fortunately preserved alone among the manuscripts of the authors published writings. It is much fuller than the printed article, a number of passages some fifty in all having been struck out by the editor with a view to economy of space. These passages affect both text and notes they vary in length from a few words to whole sections they vary also in importance but the authors own opinion was that the value of his . 6 iG. xSb vi PKEFACE work had suffered by their omission and with this opinion I agree. In the present book these passages have been restored to their place, so that the article as it left the authors hands is now, for the first time, placed before the reader. The manuscript bears no trace of the editorial blue pencil, and the original proof no longer exists so that a doubt may arise as to whether any particular omission may not have been made by the author himself when he corrected the proofs. But it is clear, from a comparison of manuscript and print, that his proof-corrections were few and unimportant. No real difficulty, therefore, has arisen in deciding upon the restorations. The authors style was so concise that greater brevity could not be attained without sacrifice of the matter. It should be borne in mind that the article on Logic was written and published in 1882. The supplementary articles, by which it is followed in this volume, are all contributions to the history of logic but the first of these that on Category, also reprinted from the Encyclopaedia Britannica, dates from six years earlier and only the last carries the story on towards a more recent development of logical

theory. Eeaders of the authors works do not need to be reminded that his own point of view underwent modification, and that there are some things here which he might have expressed differently had he revised the work himself. With the authors manuscript and printed copy before me, my own work as editor has consisted chiefly in selecting the material and seeing it through the press. Some omitted references have been sup plied a few slips of the pen or the press, formerly overlooked, have been corrected unwieldy paragraphs have been broken up, and the punctuation has been simplified but nothing new has been added to text or notes. I am responsible for the choice of a title. It remains for me to express my grateful thanks to the Syndics of the Cambridge University Press for allowing the publication of the articles on Logic and on Category in the present form. For permission to reprint the critical notices from Mind, with which the volume ends, I am indebted to the kindness of Professor Davidson of Aberdeen, literary executor of the late Professor Bain. W. E. SOELEY. KINGS COLLEGE, CAMBRIDGE, October 1911. Originally published in 1938. This compact treatise is a complete treatment of Aristotle's logic as containing negative terms. It begins with defining Aristotelian logic as a subject-predicate logic confining itself to the four forms of categorical proposition known as the A, E, I and O forms. It assigns conventional meanings to these categorical forms such that subalternation holds. It continues to discuss the development of the logic since the time of its founder and address traditional logic as it existed in the twentieth century. The primary consideration of the book is the inclusion of negative terms - obversion, contraposition etc. – within traditional logic by addressing three questions, of systematization, the rules, and the interpretation. 1. STRUCTURE AND REFERENCES 1.1. The main part of the dictionary consists of alphabetically arranged articles concerned with basic logical theories and some other selected topics. Within each article a set of concepts is defined in their mutual relations. This way of defining concepts in the context of a theory provides better understand ing of ideas than that provided by isolated short defmitions. A disadvantage of this method is that it takes more time to look something up inside an extensive article. To reduce this disadvantage the following measures have been adopted. Each article is divided into numbered sections, the numbers, in boldface type, being addresses to which we refer. Those sections of larger articles which are divided at the first level, i.e. numbered with single numerals, have titles. Main sections are further subdivided, the subsections being numbered by numerals added to the main section number, e.g. I, 1.1, 1.2, ... , 1.1.1, 1.1.2, and so on. A comprehensive subject index is supplied together with a glossary. The aim of the latter is to provide, if possible, short defmitions which sometimes may prove sufficient. As to the use of the glossary, see the comment preceding it. This collection of new essays presents cutting-edge research on the semantic conception of logic, the invariance criteria of logicality, grammaticality, and logical truth. Contributors explore the history of the semantic tradition, starting with Tarski, and its historical applications, while central criticisms of the tradition, and especially the use of invariance criteria to explain logicality, are revisited by the original participants in that debate. Other essays discuss more recent criticism of the approach, and researchers from mathematics and linguistics weigh in on the role of the semantic tradition in their disciplines. This book will be invaluable to philosophers and logicians alike. This book provides you with all the tools you need to write an excellent academic article and get it published. Excerpt from Elements of Logic: Comprising the Substance of the Article, in the Encyclopedia Metropolitana; With Additions, &C The revieal'of a study which been regarded as an obsolete absu have, appeared to many persons, thirty years ago, as an undertaking far more di icult than the introduction of some new study - as resembling rather the attempt to restore life to one of the antediluvian fossil-plants, than the rearing of a young seedling into a tree. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works." Have you ever read a legal opinion and come across an odd term like the fallacy of denying the antecedent, the fallacy of the undistributed middle, or the fallacy of the illicit process and wondered how you missed that in law school? You're not alone: every day, lawyers make arguments that fatally trespass the rules of formal logic—without realizing it—because traditional legal education often overlooks imparting the practical wisdom of ancient philosophy as it teaches students how to "think like a lawyer." In his book, The Force of Logic: Using Formal Logic as a Tool in the Craft of Legal Argument, lawyer and law professor Stephen M. Rice guides you to develop your powers of legal reasoning in a new way, through effective tips and tactics that will forever change the way you argue your cases. Rice contends that formal logic provides tools that help lawyers distinguish good arguments from bad ones and, moreover, that they are simple to learn and use. When you know how to recognize logical fallacies, you will not only strengthen your own arguments, but you will also be able to punch holes in your opponent's—and that can make the difference between winning and losing. In this book, Rice builds on the theoretical foundation of formal logic by demonstrating logical fallacies through the use of anecdotes, examples, graphical illustrations, and exercises for you to try that are derived from common case documents. It is a hands-on primer that presents a practical approach for understanding and mastering the place of formal logic in the art of legal reasoning. Whether you are a lawyer, a judge, a scholar, or a student, The Force of Logic will inspire you to love legal argument, and appreciate its beauty and complexity in a brand new way. This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work was reproduced from the original artifact, and remains as true to the original work as possible. Therefore, you will see the original copyright references, library stamps (as most of these works have been housed in our most important libraries around the world), and other notations in the work.This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work.As a reproduction of a historical artifact, this work may contain missing or blurred pages, poor pictures, errant marks, etc. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant. "A remarkable book capable of reshaping what one takes philosophy to be." —Cora Diamond, Kenan Professor of Philosophy Emerita, University of Virginia Could there be a logical alien—a being whose ways of talking, inferring, and contradicting exhibit an entirely different logical shape than ours, yet who nonetheless is thinking? Could someone, contrary to the most basic rules of logic, think that two contradictory statements are both true at the same time? Such questions may seem outlandish, but they serve to highlight a fundamental philosophical question: is our logical form of thought merely one among many, or must it be the form of thought as such? From Descartes and Kant to Frege and Wittgenstein, philosophers have wrestled with variants of this question, and with a range of competing answers. A seminal 1991 paper, James Conant's "The Search for Logically Alien Thought," placed that question at the forefront of contemporary philosophical inquiry. The Logical Alien, edited by Sofia Miguens, gathers Conant's original article with reflections on it by eight distinguished philosophers—Jocelyn Benoist, Matthew Boyle, Martin Gustafsson, Arata Hamawaki, Adrian Moore, Barry Stroud, Peter Sullivan, and Charles Travis. Conant follows with a wide-ranging response that places the philosophical discussion in historical context, critiques his original paper, addresses the exegetical and systematic issues raised by others, and presents an alternative account. The Logical Alien challenges contemporary conceptions of how logical and philosophical form must each relate to their content. This monumental volume offers the possibility of a new direction in philosophy. In the unprecedented assault on science and logical thinking afflicting the U.S., the role of lies has been recognized, if not adequately, by the general media. Almost totally ignored, however, are the logical fallacies perpetrating ideological nonsense. Christian fundamentalists and Republican plutocrats have formed our first religiously based national political party, dedicated to lower taxes on the rich and imposition of a superstitious dictatorship by the busybodies. Led by Fox News and Rush Limbaugh, the worlds highest paid professional liar, the enemies of science and reason have deliberately accelerated the dumbing of America. Republican presidential candidates must reject climate science, and they cant unequivocally endorse the Theory of Evolution (which Theodore Roosevelt did 135 years ago). Enforced by determined Tea Party zealots, this process suppresses fact, endlessly repeats lies, and, more importantly, ignores logic. Every fallacy in the logic textbooks, buttressed by politically originated fallacies, is exploited to the fullest extent. These fallacies include the slippery slope, straw men, red herrings, reversing the burden of proof, vicious circles, language perversion, and single-entry bookkeeping, all united in rejection of science and perpetuation of free-lunch patriotism, supply-side economics, and

Somewhat like Henkin's nonstandard interpretation of higher-order logics, while the right semantics [or logical modalities is an analogue to the standard of type theory in Henkin's sense. interpretation Another possibility would be to follow W.V. Quine's advice to give up logi cal modalities as being beyond repair. Or we could also try to develop a logic of conceptual possibility, restricting the range of our "possible worlds" to those compatible with the transcendental presuppositions of our own conceptual sys tem. This looks in fact like one of the most interesting possible theories I have dreamt of developing but undoubtedly never will. Its kinship with Kant's way of thinking should be obvious. Besides putting the entire enterprise of possible-worlds semantics into a perspective, we can also see that the actual history of possible-worlds seman tics is more complicated than it might first appear to be. For the standard in terpretation of modal logics has reared its beautiful head repeatedly in the writings of Stig Kanger, Richard Montague the pre-Montague-semantics theorist, and Nino Cocchiarella. Excerpt from Elements of Logic: Comprising the Substance of the Article in the Encyclopaedia Metropolitana; With Additions, &C It has usually been assumed, however, in the case of the present subject, that a theory which does not tend to the improvement of practice is utterly unworthy of regard; and then, it is contended that Logic has no such tendency, on the plea that men may and do reason correctly without it: an objection which would equally apply in the case of Grammar, Music, Chemistry, Mechanics, &c., in all of which systems the practice must have existed previously to the theory.

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