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思想者指南系列丛书

THE NATURE AND FUNCTION OF CRITICAL AND CREATIVE THINKING

3RD EDITION



(第3版)

批判性思维与创造性思维

(美) Richard Paul (美) Linda Elder 著

外语教学与研究出版社

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序 言

思辨能力或者批判性思维由两个维度组成，在情感态度层面包括勤学好问、相信理性、尊重事实、谨慎判断、公正评价、敏于探究、持之以恒地追求真理等一系列思维品质或心理倾向；在认知层面包括对证据、概念、方法、标准、背景等要素进行阐述、分析、评价、推理与解释的一系列技能。

思辨能力的重要性应该是不言而喻的。两千多年前的中国古代典籍《礼记·中庸》曰：“博学之，审问之，慎思之，明辨之，笃行之。”古希腊哲人苏格拉底说：“未经审视的人生不值得一过。”可以说，文明的诞生正是人类自觉运用思辨能力，不断适应并改造自然环境的结果。如果说游牧时代、农业时代以及现代早期，人类思辨能力虽然并不完善，也远未普及，但通过科学技术以及人文知识的不断积累创新，推动人类文明阔步前进，已经显示出不可抑制的巨大能量，那么，进入信息时代、知识经济时代和全球化时代，思辨能力对于人类文明整体可持续发展以及对于每一个体的生存和发展，其重要性将史无前例地彰显。

我们已进入一个加速变化、普遍联系和日益复杂的时代。随着交通技术和信息技术日新月异的发展，不同国家和文化空前紧密地联系在一起。这在促进合作的同时，导致了更多的冲突；人类所掌握的技术力量与日俱增，在不断提高物质生活质量的同时，也极大地破坏了我们赖以生存的自然环境；工业化、城市化和信息化的不断延伸，全方位扩大了人的自由空间，同时却削弱了维系社会秩序和稳定的价值体系与行为准则。这一切变化对人类的思辨能力和应变能力都提出了前所未有的要求。正如本套丛书作者理查德·保罗（Richard Paul）和琳达·埃尔德（Linda Elder）所创办的思辨研究中

心的“使命”所指出的，“我们身处其中的这个世界要求我们不断重新学习，习惯性重新思考我们的决定，周期性重新评价我们的工作和生活方式。简言之，我们面临一个全新的世界，在这个新世界，大脑掌控自己并经常进行自我分析的能力将日益决定我们工作的质量、生活的质量乃至我们的生存本身。”

遗憾的是，面临时代巨变对人类思辨能力提出的新挑战，我们的教育和社会都尚未做好充分准备。从小学到大学，在很大程度上我们的教育依然围绕知识的搬运而展开，学校周而复始的考试不断强化学生对标准答案的追求而不是对问题复杂性和探索过程的关注，全社会也尚未形成鼓励独立思辨与开拓创新的氛围。

我们知道，人类大脑并不具备天然遗传的思辨能力。事实上，在自然状态下，人们往往倾向于以自我为中心或随波逐流，容易被偏见左右，固守陈见，急于判断，为利益或情感所左右。因此，思辨能力需要通过后天的学习和训练得以提高，思辨能力培养也因此应该成为教育的不懈使命。

哈佛大学以培养学生“乐于发现和思辨”为根本追求；剑桥大学也把“鼓励怀疑精神”奉为宗旨。美国学者彼得·法乔恩（Peter Facione）一言以蔽之：“教育，不折不扣，就是学会思考。”

和任何其他技能的学习一样，学会思考也是有规律可循的。首先，学习者应该了解思辨的基本特点和理论框架。根据理查德·保罗和琳达·埃尔德的研究，所有的推理都有一个目的，都试图澄清或解决问题，都基于假设，都从某一视角展开，都基于数据、信息和证据，都通过概念和观念进行表达，都通过推理或阐释得出结论并对数据赋予意义，都会产生影响或后果。分析一个推理或论述的质量或有效性，意味着按照思辨的标准进行检验，这个标准由10个维度构成：清晰性、准确性、精确性、相关性、深刻性、宽广性、逻辑性、完整性、重要性、公正性。一个拥有思辨能力的人具备八

大品质，包括：诚实、谦虚、相信理性、坚忍不拔、公正、勇气、同理心、独立思考。

其次，学习者应该掌握具体的思辨方法。如：如何阐释和理解文本信息与观点？如何解析文本结构？如何评价论述的有效性？如何把已有理论和方法运用于新的场景？如何收集和鉴别信息和证据？如何论证说理？如何识别逻辑谬误？如何提问？如何对自己的思维进行反思和矫正？等等等等。

最后，思辨能力的提高必须经过系统的训练。思辨能力的发展是一个从低级思维向高级思维发展的过程，必须运用思辨的标准一以贯之地训练思辨的各要素，在各门课程的学习中练习思辨，在实际工作中使用思辨，在日常生活中体验思辨，最终使良好的思维习惯成为第二本能。

“思想者指南系列丛书”旨在为教师教授思辨方法、学生学习思辨技能和社会大众提高思辨能力提供最为简明和最为实用的操作指南。该套丛书直接从西方最具影响力的思辨能力研究和培训机构（The Foundation for Critical Thinking）原版引进，共21册，包括“基础篇”：《批判性思维术语手册》、《批判性思维概念与方法手册》、《大脑的奥秘》、《批判性思维与创造性思维》、《什么是批判性思维》、《什么是分析性思维》；“大众篇”：《识别逻辑谬误》、《思维的标准》、《如何提问》、《像苏格拉底一样提问》、《什么是伦理推理》、《什么是工科推理》、《什么是科学思维》；“教学篇”：《透视教育时尚》、《思辨能力评价标准》、《思辨阅读与写作测评》、《如何促进主动学习与合作学习》、《如何提升学生的学习能力》、《如何通过思辨学好一门学科》、《如何进行思辨性阅读》、《如何进行思辨性写作》。

由理查德·保罗和琳达·埃尔德两位思辨能力研究领域的全球顶级大师领衔研发的“思想者指南系列丛书”，享誉北美乃至全球，销售数百万册，被美国中小学、高等学校乃至公司和政府部门普遍用于

教学、培训和人才选拔。该套丛书具有如下特点：其一，语言简洁明快，具有一般英文水平的读者都能阅读；其二，内容生动易懂，运用大量的具体例子解释思辨的理论和方法；其三，针对性和操作性极强，教师可以从“教学篇”子系列中获取指导教学改革的思辨教学策略与方法，学生也可从“教学篇”子系列中找到提高不同学科学习能力的思辨技巧；一般社会人士可以通过“大众篇”子系列掌握思辨的通用技巧，提高在社会场景中分析问题和解决问题的能力；各类读者都可以通过“基础篇”子系列掌握思维的基本规律和思辨的基本理论。

总之，思辨能力的高下将决定一个人学业的优劣、事业的成败乃至一个民族的兴衰。在此意义上，我向全国中小学教师、高等学校教师和学生以及社会大众郑重推荐“思想者指南系列丛书”。相信该套丛书的普及阅读和学习运用，必将有利于促进教育改革，提高人才培养质量，提升大众思辨能力，为创新型国家建设和社会文明进步作出深远的贡献。

孙有中

2016年春于北京外国语大学

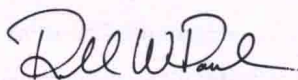
Letter to the Reader

To the untutored, creative and critical thinking often seem to be opposite forms of thought — the first based on irrational or unconscious forces, the second on rational and conscious processes; the first undirectable and unteachable, the second directable and teachable. There is some, but very little, truth in this view. The truth in it is that there is no known way to generate creative geniuses, or to get students to produce novel, ground-breaking ideas. There are manifestations of creativity that we do not fully understand. The same is true of forms of criticality. Yet there are ways to teach simultaneously for both creative and critical thinking. To do so requires that we focus on these terms in practical, everyday contexts, that we keep their central meanings in mind, that we seek insight into how they overlap and interact with one another. When we understand critical and creative thought truly and deeply, we recognize them as inseparable, integrated, and unitary.

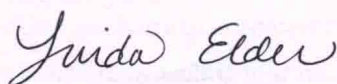
We believe that creative thinking, especially, must be demystified and brought down to earth. For this reason, we deal with it in this guide not only in terms of its highest manifestation (in the work of geniuses), but also in its most humble manifestations (in everyday perception and thought).

In learning new concepts, in making sense of our experience, in apprehending a new subject field or language, in reading, writing, speaking, and listening, our minds engage in full-fledged (though commonplace) creative acts. To understand how and why this is so, we need not appeal to the esoteric, the recondite, or the arcane.

To live productively, we need to internalize and use intellectual standards to assess our thinking (criticality). We also need to generate — through creative acts of the mind — the products to be assessed. That minds create meanings is not in doubt; whether they create meanings that are useful, insightful, or profound is. Imagination and reason are an inseparable team. They function best in tandem, like the right and left legs in walking or running. Studying either one separately only ensures that both remain mysterious and puzzling, or, just as unfortunate, are reduced to stereotype and caricature.

A handwritten signature in black ink, appearing to read 'Dick Paul'.

Richard Paul
Center for Critical Thinking

A handwritten signature in black ink, appearing to read 'Linda Elder'.

Linda Elder
Foundation for Critical Thinking

ABOUT THE AUTHORS

Dr. Richard Paul was a leading proponent of critical thinking until his death in August of 2015, and in his work and legacy, Paul remains an international authority on critical thinking. He founded the Center for Critical Thinking at Sonoma State University in 1980, followed by the Foundation for Critical Thinking. In his lifetime, he developed concepts, principles, and theory essential to a robust and fairminded conception of critical thinking; he worked tenaciously to advance ethical, or strong-sense, critical thinking throughout education and society. In his lifetime, Paul authored more than 200 articles and seven books on critical thinking. He presented workshops to hundreds of thousands of educators over his 35-year history as a primary leader in the critical thinking movement.

Dr. Linda Elder is an educational psychologist who has taught both psychology and critical thinking at the college level. She is the President of the Foundation for Critical Thinking and the Executive Director of the Center for Critical Thinking. Dr. Elder has a special interest in the relation of thought and emotion, as well as the cognitive and affective. She has developed an original theory of the stages of critical thinking development. Dr. Elder has co-authored four books on critical thinking as well as twenty-four Thinkers' Guides. She has presented workshops to more than 20,000 educators.

Contents

Letter to the Reader	vii
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Part I: The Very Idea of Critical and Creative Thinking

The Inseparability of Critical and Creative Thought	1
Thinking that Grasps the Logic of Things.....	7
Reasoning as a Creative Act	8
Creative Genius—An Exception?	10
Language as a Guide.....	11
The Narrow-Minded Genius.....	13
The Interplay Among Inborn Gifts, Environment, and Self-Motivation	14
The Questioning Minds of Newton, Darwin, and Einstein	20
Creativity—Not Mystified	23
The Elements of Thought	24
Intellectual Standards.....	27
Critical Thinking Applied to the Arts	30

Part II: Critical/Creative Thinking and the Foundations of Meaningfulness

Figuring Out the Logic of Things	34
Learning Concepts and Language.....	38
Critiquing Human Thinking	40
Learning Academic Disciplines	42
Questioning.....	44
Reading, Writing, Speaking, and Listening	45
Conclusion	54

PART I

The Very Idea of Critical and Creative Thinking

The Inseparability of Critical and Creative Thought

The critical and creative functions of the mind are so interwoven that neither can be separated from the other without an essential loss to both.

— Anonymous

**Criticality
assesses;
creativity
originates.**

For several reasons the relationship between criticality and creativity is commonly misunderstood. One reason is cultural, resulting largely from the mass media's portrayal of creative and critical persons. The media frequently represent the creative person as a cousin to

the nutty professor, highly imaginative, spontaneous, emotional, a source of off-beat ideas, but often out of touch with everyday reality. The critical person, in turn, is wrongly represented as given to fault-finding, as skeptical, negative, captious, severe, and hypercritical; as focused on trivial faults, either unduly exacting or perversely hard to please; lacking in spontaneity, imagination, and emotion.

These cultural stereotypes are not validated by precise use of the words critical and creative. For example, in *Webster's Dictionary of Synonyms*, the word "critical,"

when applied to persons who judge and to their judgments, not only may, but in very precise use does, imply an effort to see a thing clearly and truly so that not only the good in it may be distinguished from the bad and the perfect from the imperfect, but also that it as a whole may be fairly judged and valued.

In *Webster's New World Dictionary*, the word "creative" has three interrelated meanings:

1) creating or able to create, 2) having or showing imagination and artistic or intellectual inventiveness (creative writing), and 3) stimulating the imagination and inventive powers.

Accordingly, **critical** and **creative** thought are both achievements of thought. Creativity masters a process of making or producing, criticality a process of assessing or judging. The very definition of the word "creative" implies a critical component (e.g., "having or showing imagination and artistic or intellectual inventiveness"). When engaged in high-quality thought, the mind must simultaneously produce and assess, both generate and judge the products it fabricates. In short, sound thinking requires both imagination and intellectual standards.

Throughout this guide we elaborate on the essential idea that intellectual discipline and rigor are at home with originality and productivity, and also that these supposed poles of thinking (critical and creative thought) are inseparable aspects of excellence of thought. Whether we are dealing with the most mundane intellectual acts of the mind or those of the most imaginative artist or thinker, the creative and the critical are interwoven. It is the nature of the mind to create thoughts, though the quality of that creation varies enormously from person to person, as well as from thought to thought.

Achieving quality requires standards of quality — and hence, criticality.

In this guide, then, we explore the interdependence of criticality and creativity, exemplifying this interdependence at the most complex level of thought (that of genius) as well as the simplest level of thought (that of making sense of ordinary objects in everyday experience).

We also explore a corollary theme: that all creation of meaning tends toward systems of meanings rather than existing in the mind as unconnected atomic particles. This is integral to the nature of thought itself. The construction of any meaning assumes other meanings and implies yet further meanings (which in turn imply still further meanings). When attempting to understand any meaning, humans naturally seek to place it in a cluster of meanings, however partial their understanding might be. When they attempt to understand an idea as a thing unto itself, it doesn't take root in the mind. It doesn't connect to the systems of meanings within the mind. In short, for humans to think well, we must think within systems. We must create systems of meaning and assess our creations for accuracy, relevance, and adequacy. More on this point later.

Let's begin with some fundamentals. First, *all thinking is not of the same quality*. High-quality thinking is thinking that does the job set for it. It is thinking that accomplishes the purposes of thinking. If thinking lacks a purpose — if it is aimless — it may chance upon something of value to the thinker. But more often it will simply wander into an endless stream of unanalyzed associations from one's unanalyzed past: "Hotdogs remind me of ballgames, ballgames remind me of Chicago, Chicago of my old neighborhood, my old neighborhood of my grandmother, of her pies, of having to eat what I didn't like, which reminds me...which reminds me...which reminds me..." Few people need training in aimless thinking such as this, or in daydreaming or

fantasizing. For the most part, we are naturals at aimless thinking. We are inherently proficient at daydreaming and fantasizing.

However, we often have trouble in purposeful thinking, especially purposeful thinking that requires posing problems and reasoning through intricacies. Purposeful thinking requires both critical and creative thinking. Both are intimately connected to figuring things out. There is a natural marriage between them. Indeed, all truly excellent thinking combines these two dimensions. Whenever our thinking excels, it excels because we succeed in designing or engendering, fashioning or originating, creating or producing results and outcomes appropriate to our ends in thinking. It has, in a word, a creative dimension.

To achieve any challenging end, though, we also must have criteria: gauges, measures, models, principles, standards, or tests to use in judging whether we are approaching that end. What's more, we must apply our criteria in a way that is discerning, discriminating, exacting, and judicious. We must continually monitor and assess how our thinking is going, whether it is on the right track, whether it is sufficiently clear, accurate, precise, consistent, relevant, deep, or broad for our purposes.

We don't achieve excellence in thinking with no end in view. We design for a reason. We fashion and create knowing what we are trying to fashion and create. We originate and produce with a sense of why we are doing so. Thinking that is random, that roams aimlessly through half-formed images, that meanders without an organizing goal, is neither creative nor critical.

This is true because when the mind thinks aimlessly, its energy and drive are typically low, its tendency is generally inert, its results usually barren. What is aimless is also normally pointless and moves in familiar alliance with

indolence and dormancy. But when thinking takes on a challenging task, the mind must come alive, ready itself for intellectual labor, engage the intellect in some form of work upon some intellectual object — until such time as it succeeds in originating, formulating, designing, engendering, creating, or producing what is necessary for the achievement of its goal. Intellectual work is essential to creating intellectual products, and that work, that production, presupposes *intellectual standards* judiciously applied. When this happens, creativity and criticality are interwoven into one seamless fabric.

Like the body, the mind has its own form of *fitness* or excellence. Like the body, that fitness is caused by and reflected in activities performed in accordance with standards (criticality). A fit mind can engage successfully in designing, fashioning, formulating, originating, or producing intellectual products worthy of its challenging ends. To achieve this fitness, the mind must learn to take charge of itself, energize itself, press forward when difficulties emerge, proceed slowly and methodically when meticulousness is necessary, immerse itself in a task, become attentive, reflective, and engrossed, circle back on a train of thought, recheck to ensure that it has been thorough, accurate, exact, and deep.

Its *generative power* (creativity) and its *judiciousness* (criticality) can be separated only artificially. In the process of actual thought, they are one. Such thought is systematic — when being systematic serves its end. It also can cast system aside and ransack its intuitions for a lead — when no clear maneuver, plan, strategy, or tactic comes to mind. And the generative, the productive, the creative mind has standards for what it generates and produces. It is not a mind lacking judiciousness, discernment, and judgment. It is not a mind incapable of acuteness and exactness. It is not a mind whose standards are vagueness, imprecision, inaccuracy, irrelevance, triviality, inconsistency, superficiality, and narrowness. The fit mind generates and produces precisely because it has

high standards for itself, because it cares about how and what it creates.

Serious thinking originates in a commitment to grasp some truth, to get to the bottom of something, to make accurate sense of that about which it is thinking. This figuring out cannot simply be a matter of arbitrary creation or production. Specific restraints and requirements must be met, something outside the will to which the will must bend, some unyielding objectivity we must painstakingly take into account. This severe, inflexible, stern reality is exactly what forces intellectual criticality and productivity into one seamless whole. If there were no objectivity outside our process of figuring out, we would have literally nothing to figure out. If what we figure out can be anything we want it to be, anything we fantasize it as being, there would be no logic to the expression “figure out.”

In a sense, of course, all minds create and produce in a manner reflective of their fitness or lack thereof. Minds indifferent to standards and disciplined judgment tend to judge inexactly, inaccurately, inappropriately, prejudicially. Prejudices, hate, irrational jealousies and fears, stereotypes and misconceptions — these, too, are created, produced, originated by minds. Without minds to produce them, they would not exist. Yet they are not the products of creative minds. They reflect an undisciplined, uncritical mode of thinking and therefore are not properly thought of as products of creativity. In short, except in rare circumstances, creativity presupposes criticality, and criticality creativity. This essential insight is often missed or obscured.

At this point we will focus on the most important sense of creativity in thinking, the sense of thinking as a making, as a process of creating thought, as a process that brings thoughts into being to organize, shape, interpret, and make sense of the world — thinking that, once developed, enables us to achieve goals, accomplish purposes, solve problems, and settle important issues we face as humans in a world in which rapid change is becoming one of the few constants.