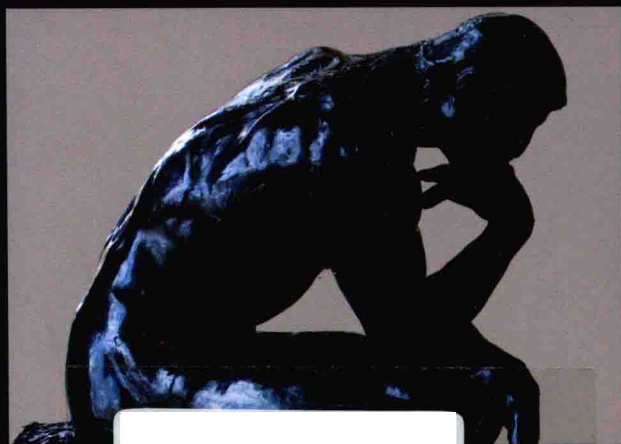


THINKER'S GUIDE LIBRARY

思想者指南系列丛书

A GLOSSARY OF CRITICAL THINKING TERMS AND CONCEPTS



批判性思维术语手册

(美) Linda Elder (美) Richard Paul 著

外语教学与研究出版社
FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

THINKER'S GUIDE LIBRARY

思想者指南系列丛书

A GLOSSARY OF CRITICAL THINKING TERMS AND CONCEPTS

批判性思维术语手册

(美) Linda Elder (美) Richard Paul 著

外语教学与研究出版社

FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

北京 BEIJING

京权图字：01-2016-3317

© Foundation for Critical Thinking, 2006

图书在版编目(CIP)数据

批判性思维术语手册：英文 / (美) 琳达·埃尔德 (Linda Elder), (美) 理查德·保罗 (Richard Paul) 著. — 北京：外语教学与研究出版社, 2016.5
(思想者指南系列丛书)
ISBN 978-7-5135-7531-7

I. ①批… II. ①琳… ②理… III. ①思维方法—术语—手册—英文 IV. ①B804-62

中国版本图书馆CIP数据核字(2016)第105964号

出版人	蔡剑峰
项目负责	任 佼
责任编辑	任 佼
封面设计	孙莉明
出版发行	外语教学与研究出版社
社 址	北京市西三环北路19号 (100089)
网 址	http://www.fltrp.com
印 刷	北京联兴盛业印刷股份有限公司
开 本	850 × 1168 1/32
印 张	4
版 次	2016年6月第1版 2016年6月第1次印刷
书 号	ISBN 978-7-5135-7531-7
定 价	15.90 元

购书咨询：(010) 88819926 电子邮箱：club@fltrp.com

外研书店：<https://waiyants.tmall.com>

凡印刷、装订质量问题，请联系我社印制部

联系电话：(010) 61207896 电子邮箱：zhijian@fltrp.com

凡侵权、盗版书籍线索，请联系我社法律事务部

举报电话：(010) 88817519 电子邮箱：banquan@fltrp.com

法律顾问：立方律师事务所 刘旭东律师

中咨律师事务所 殷 斌律师

物料号：275310001

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

Contents

Introduction	1
- A -	4
- B -	10
- C -	10
- D -	23
- E -	27
- F -	37
- G -	40
- H -	41
- I -	43
- J -	59
- K -	60
- L -	61
- M -	66
- N -	69
- O -	71
- P -	72
- Q -	78
- R -	81
- S -	87
- T -	96
- U -	99
- V -	100
- W -	101
References.....	105
Index.....	107

Introduction

This compendium of terms is a testament to the fact that critical thinking entails a body of concepts and principles which, when internalized and practiced, enable people to raise their thinking to a higher level. Critical thinking, in one form or another, has been implicit in the thinking of some people from the earliest days of *homo sapiens* (the species that thinks). Once thinking was raised to the level of consciousness, it followed that at least some people would begin to think consciously about thinking (noticing its sometimes “flawed” nature). Yet we are still a considerable distance from the emergence of *homo “criticus” sapiens* (the species that thinks critically). Critical thinking has not yet become a dominant cultural value nor critical-mindedness (criticality), but a common personal attribute.

Why Critical Thinking?

Humans live in a world of thoughts. We accept some thoughts as true. We reject others as false. But the thoughts we perceive as true are sometimes false, unsound, or misleading. And the thoughts we perceive as false and trivial are sometimes true and significant.

The mind doesn’t naturally grasp the truth. *We don’t naturally see things as they are.* We don’t automatically sense what is reasonable and what unreasonable. Our thought is often biased by our agendas, interests, and values. *We typically see things as we want to.* We twist reality to fit our preconceived ideas. Distorting reality is common in human life. It is a phenomenon to which we all, at times, unfortunately fall prey.

Each of us views the world through multiple lenses, often shifting them to fit our changing feelings. In addition, much of our perspective is unconscious and uncritical and has been influenced by many forces — including social, political, economic, biological, psychological, and religious influences. Social rules and taboos, religious and political ideologies, biological and psychological impulses, all play a role, often unconscious, in human thinking. Selfishness, vested interest and parochialism, are deeply influential in the intellectual and emotional lives of most people.

What Is Critical Thinking?

To live successfully in this world of power, propaganda, manipulation, and exploitation, we need an orientation that enables us to exercise oversight on thinking (on our thinking and that of others). We need a systematic way to further *sound* thinking and limit *unsound* thinking. We need to take command of our cognitive processes in order to determine in a reasonable way what thinking to accept and what to reject. Critical thinking is that process, that orientation, and in the finest cases, that way of living. As William Graham Sumner put it, more than a hundred years ago:

[Critical thinking is]... "the examination and test of propositions of any kind which are offered for acceptance, in order to find out whether they correspond to reality or not. The critical faculty is a product of education and training. It is a mental habit and power. It is a prime condition of human welfare that men and women should be trained in it. It is our only guarantee against delusion, deception, superstition and misapprehension of ourselves and our earthy circumstances."

What Are Its Forms and Manifestations?

Critical thinking concepts encompass a large network of interrelated ideas. To understand one such idea often entails understanding other ideas. As such, critical thinking concepts are best understood in relationship to each other and in contrast to their opposites. We have focused on concepts which are non-technical (and are thus available in any well-researched dictionary of the English language). Furthermore, we have focused on concepts of use to those interested in an **explicit, global, Socratic, and systematic** approach to critical thinking, rather than on approaches that are **implicit, sophistic, one-dimensional, or episodic**. By the way, each of these terms (descriptive of approaches to critical thinking) is included in this glossary, so if you are puzzled by any of them you can put this glossary immediately to use by looking them up.

The concept of critical thinking, comprehensively viewed, is a rich, variegated, and, to some extent, open-ended concept. There is no way to encompass it "completely" and inexhaustibly. There is no way to encompass it in a one-sentence "definition." Nevertheless, at its base is a foundational set of

meanings presupposed in all of its varied uses. Its multiplicity is given by the fact that one can pursue the improvement of thinking by somewhat different studies with somewhat different scope and trained on different foci.

Thus, critical thinking may be *implicit* in human thought, or **explicit**. It may be fostered **systematically**, or engaged in only **episodically**. It may foster **selfishness** or **fairmindedness**. It may be **global** (multi-dimensional, broad, generalizable) or **specialized** (one-dimensional, narrow, intradisciplinary).¹

Though we recognize all of these forms and manifestations of critical thinking, still we believe that the approach most essential to the non-specialist is that which is most functional across all disciplines and domains. What is more, even specialists are well-advised to master the foundations of global Socratic critical thinking since specialists need to learn to think effectively across disciplines and other domains of thought (for example, to correct for the bias and limitations of their discipline).

Final Details and Qualifications

The network of critical thinking terms in this glossary is in no way exhaustive. Many more terms might be added to it. For example, one important concept in critical thinking is captured in the term “intellectual standards,” which is defined as “criteria used to evaluate or judge the quality of reasoning.” There is an array of such standards extant in all modern natural languages, including *clarity*, *accuracy*, *precision*, *depth*, *breadth* and *fairness*. These and a number of other intellectual standard terms are included in this glossary. However, due to space limitations, a great many other intellectual standard words have been excluded.

We have also included a significant number of terms which illuminate the barriers to the development of critical thought — for example those terms which center around the problems of *sociocentric* and *egocentric thought*.

For most entries we provide a brief definition followed by elaboration and exemplification of the concept. In a number of cases we link the terms to instruction, for the benefit of our readers who are educators or students.

Finally please note that, for every term, we have included only those definitions relevant to critical thinking, in some cases leaving out a significant number of other possible uses of the term.

¹ See critical thinking forms and manifestations.

- A -

accurate: free from errors, mistakes, or distortion.

Accuracy is an essential intellectual standard and therefore an important goal in critical thinking. However, achieving it is often a matter of degree. The extent to which we have achieved it is determined by the conditions set forth by the question at issue and/or context (and how well we have met those conditions).

It is important for students to develop a world view supported by accurate understandings. Yet we cannot “give” students these understandings. Rather they must think their way through information and ideas, making mistakes in the process. As their perspective develops, they develop greater accuracy and depth of vision. And they come to see that thinking within any perspective may entail distortions or inaccuracies. Critical thinkers are aware of this likely phenomenon and thus strive to accurately represent their own view, as well as those of others.

Related terms: *Correct* connotes little more than absence of error; *accurate* implies a positive exercise of one to obtain conformity with fact or truth; *exact* stresses perfect conformity to fact, truth, or some standard; *precise* suggests minute accuracy of detail. Also related: *scrupulous, conscientious*.

See *intellectual standards*.

activated ignorance: taking into the mind and actively using information that is false, though it is mistakenly taken to be true.

Many problems are caused by activated ignorance, by people acting on beliefs that aren't true. The philosopher René Descartes came to confidently believe that animals have no actual feelings, but are simply robotic machines. Based on this activated ignorance, he performed painful experiments on animals, interpreting their cries of pain as mere noises. Many forms of activated ignorance result from social rules and ideologies.

Critical thinkers understand the problem of activated ignorance in human thought, and therefore routinely question their beliefs, especially when acting upon them has significant potential implications for the harm, injury, or suffering of others. They recognize that everyone has some beliefs that are, in fact, a form of activated ignorance. They also recognize that it is not always

easy to identify what is and is not activated ignorance.

See *activated knowledge*, *inert information*, *sociocentricity*.

activated knowledge: taking into the mind, and actively using, information that is not only true but, when insightfully understood, leads the thinker by implication to more knowledge, deeper understandings, and rational actions.

Schooling should lead to the developing of activated knowledge, when instead it often fosters *activated ignorance* or *inert information*. Consider the study of history, for example. In history classes, many students do no more than memorize isolated statements in the history textbook so as to pass exams. Some of these statements — the ones they don't understand and could not explain — become part of the students' battery of *inert information*. Other statements — the ones they misunderstand and wrongly explain (but believe to be true) — become part of the students' battery of activated ignorance.

What is much more powerful, from a critical thinking perspective, is learning *to think within the logic of history*. When we can do so skillfully, we have formed a basis for activated knowledge.

Consider, for example, these two powerful ideas:

- History is always told from some point of view.
- Any point of view may be biased, prejudiced, distorted.

When these two understandings are “activated” in our thinking, we routinely read history in a new way. We notice limitations in any given point of view. We notice, for instance, when facts are left out or distorted, and how the facts are interpreted. We are also able to imagine alternative historical accounts (written, for example, from differing points of view).

See *activated ignorance*, *inert information*.

ambiguous: having two or more possible meanings, either through deliberate intention or due to inexactness of expression; indefinite, uncertain.

Sensitivity to ambiguity and vagueness in writing and speech is essential to good thinking. A continual effort to be as clear and precise as the context allows is fundamental to developing effective and persuasive thought. Some ambiguity may, in some contexts, be appropriate — for example in poetry or the visual arts. But in everyday communication, clarity of thought usually requires

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

A unambiguous uses of language. For example, consider the statement, “Welfare is corrupt.” Among the possible meanings of this sentence are the following:

- B** • Those who administer welfare programs take bribes to administer welfare
- C** policy unfairly.
- D** • Welfare policies are written in such a way that much of the money goes to
- E** people who don’t deserve it rather than to those who do.
- F** • A government that gives money to people who haven’t earned it corrupts
- G** both the giver and the recipient.

Thus the statement “welfare is corrupt” is ambiguous. Until we know the intended meaning, we will not know whether we agree or disagree.

Ambiguous conceptions and communication lead to a vast array of problems in human life. Thus students need routine practice in clarifying thought.

See *clarify, intellectual standards*.

K **analyze:** to decompose into constituent parts; to examine in detail so as to

L determine the nature of, to look more deeply into an issue or situation; to find the

M essence or structure of; to take apart and examine the structures of something.

Analyzing thought is a fundamental goal of critical thinking. It represents one of the three sets of essential understandings in critical thinking (the other two being the assessment of thought and the pursuit of intellectual traits). Since reasoning is a fundamental “activity” of the human animal, becoming skilled at taking reasoning apart and examining its parts for quality is essential to consistently reasoning at a high level of skill. Thus students should routinely be asked to analyze their ideas, claims, experiences, interpretations, judgments, and theories. They should do the same with those they hear and read.

See *elements of reasoning, intellectual standards, intellectual traits*.

U **argue:** two meanings of this word need to be distinguished: 1) to quarrel with

V during a disagreement (often involving strong, irrational, emotional displays);

W and 2) to attempt to persuade by giving reasons.

In emphasizing critical thinking, faculty should routinely foster movement in their students from the first sense of the word to the second; that is, help them understand the importance of giving reasons to support their views without allowing their egos to get involved in what they are saying. Egocentric

involvement in one's views is a fundamental problem in human life. To argue *reasonably* is to rely upon logic and reason, to bring forth facts that support or refute a point. This should be done in a spirit of cooperation and good will.

See *argument, confidence in reason*.

argument: a reason (or reasons) offered for or against something; the offering of such reasons; the word "argument" may also refer to a discussion in which there is disagreement and suggests the use of logic and the bringing forth of facts to support or refute a point.

Argumentation, the use of reasons in support of arguments or positions, is an important dimension of critical thinking. Skilled argumentation entails supporting one's own views using logic and sound reasoning. But it also involves sensitivity to evidence supporting opposing views. Fairminded critical thinkers consider all relevant evidence in arguing for a position, and are willing to change their views when the evidence requires it of them. Sophistic argumentation is skilled reasoning that is misleading or inappropriately one-sided.

See *argue, intellectual empathy, sophisticated thinking*.

assessment: See *evaluation*.

associational thinking: ideas, memories, experiences, or feelings linked in the mind for any number of reasons, but not necessarily "logically."

Much human thinking is associational in nature. That is to say that the mind connects many ideas with each other, not because there is a "logical" link between them, but because they simply remind us of other ideas for any number of reasons – for example because they occurred in our experience at the same time. Thus, if we were often punished for "slamming the door," then we might associate doors being slammed with, say, fear of punishment. Our minds are filled with associations linked in our experience. Associations might take the following form: "This reminds me of that, which reminds me of that, which reminds me of this other thing." For example, "Growing up in Little Rock reminds me of hot summer days, which reminds me of playing softball, which reminds me of a softball coach I once had," so forth and so on. The human mind naturally tends toward associational, undisciplined, unrestrained

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

A thinking rather than purposeful, relevant, accurate thinking. There is a place
 B for associational thinking when, for example, one wants to revisit a time
 C and place in one's past, or simply relax the mind and experience pleasant
 D associations. But associational thinking, which is often unconscious, can also
 E create problems. If a person who was cruel to me as a child had a particular
 F tone of voice, I may find myself (unconsciously) disliking a person because he
 G has the same tone of voice.

When dealing with important issues, rather than relying on random
 H connotations and suggestions in the mind, critical thought deliberately directs
 I one's thinking toward that which is clear, accurate, relevant, substantive, and
 J reasonable. It values taking command of one's associations and being on the
 K lookout for times when inappropriate associations are being made.

See *cultural associations, intellectual standards*.

assume: to take for granted or presuppose.

L All thinking is based on assumptions, though not all assumptions are
 M justifiable. Critical thinkers strive to make their assumptions explicit in order
 N to assess and correct them when good reasons or the evidence requires it. This
 O is important because assumptions typically lie at the unconscious level of
 P thought. Assumptions can vary from the mundane to the complex, from the
 Q justifiable to the problematic: "I hear a scratch at the door. I get up to let the cat
 R in. I assume that only the cat makes that noise, and that he makes it only when
 S he wants to be let in." "A man I am in a relationship with speaks gruffly to me.
 T I infer I have done something wrong and he is angry with me. I feel guilty and
 U hurt. I assume he only speaks gruffly to me when he is angry with me and I
 V have done something wrong. I assume that whenever he is angry at me I have
 W done something for which I should feel guilty."

People often equate making assumptions with making false or unjustifiable
 X assumptions. When people say, "Don't assume," this is what they mean. In fact,
 Y we cannot avoid making assumptions and many are justifiable. (For instance,
 Z we have assumed that people who read this glossary can read English, or are
 reading a translation of it.) Rather than saying "Never assume," which isn't
 possible, say, "Be aware of and careful about the assumptions you make, and
 be ready to examine and assess them."

See *assumption, elements of reasoning.*

assumption: a statement accepted or supposed as true without proof or demonstration; an unstated premise or belief; a belief taken for granted.

By the word “assumption” we mean “whatever we take for granted as true” to figure out something else. Thus, if you infer that because a candidate is a Republican, he or she will support a balanced budget, you assume that all Republicans support a balanced budget. If you infer that foreign leaders presented in the news as “enemies” or “friends” of our country are in fact enemies or friends, you assume that the news is always accurate in its presentation of the character of foreign leaders. If you infer that someone who invites you to his or her apartment after a party “to continue this interesting conversation” is really interested in you romantically, you assume that the only reason someone would invite you to his apartment late at night after a party is to pursue a romantic relationship.

All human thought and experience is based on assumptions. Our thought must begin somewhere. We are typically unaware of what we assume and, therefore, rarely question our assumptions. Much of what is wrong in human thought can be found in the uncritical or unexamined assumptions that underlie it. For example, we often experience the world in such a way as to assume that we are observing things just as they are, as though we were seeing the world without the filter of a point of view.

Skilled reasoners are clear about the assumptions they make, make assumptions that are reasonable and justifiable given the situation and evidence, make assumptions that are consistent with one other, and routinely seek to figure out what they are taking for granted in any given situation.

Unskilled reasoners are often unclear about the assumptions they make, often make unjustified or unreasonable assumptions, make assumptions that are contradictory, and ignore their assumptions.

See *assume, inference, elements of reasoning.*

authority: the power or supposed right to give commands, enforce obedience, take action, or make final decisions; an influence exerted on opinion because of recognized knowledge or expertise.

Critical thinkers recognize that the ultimate authority for the justification of