



# Critical Thinking

## Why Critical Thinking?

### The Problem

Everyone thinks: it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed or down-right prejudiced. Yet the quality of our life and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated.

### A Definition

Critical thinking is the art of analyzing and evaluating thinking with a view to improving it.

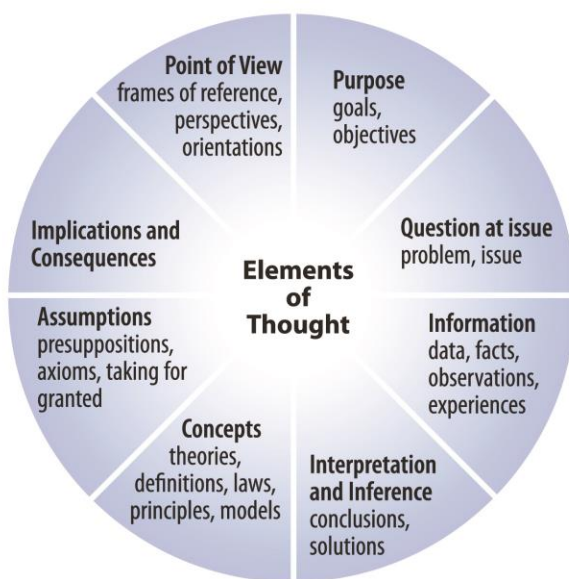
### The Result

A well-cultivated critical thinker:

- Raises vital questions and problems, formulating them clearly and precisely;
- Gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- Comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- Thinks open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- Communicates effectively with others in figuring out solutions to complex problems.

Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking. It requires rigorous standards of excellence and mindful command of their use. It entails effective communication and problem solving abilities and a commitment to overcoming our native egocentrism and sociocentrism.

## The Elements of Thought



## A Checklist for Reasoning

1. **All reasoning has a PURPOSE.**
  - Can you state your purpose clearly?
  - What is the objective of your reasoning?
  - Does your reasoning focus throughout on your goal?
  - Is your goal realistic?
2. **All reasoning is an attempt to figure something out, to settle some QUESTION, to solve some PROBLEM.**
  - What question are you trying to answer?
  - Are there other ways to think about the question?
  - Can you divide the question into sub-questions?
  - Is this a question that has one right answer or can there be more than one reasonable answer?
  - Does this question require judgment rather than facts alone?
3. **All reasoning is based on ASSUMPTIONS.**



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- What assumptions are you making? Are they justified?
  - How are your assumptions shaping your point of view?
  - Which of your assumptions might reasonably be questioned?
4. **All reasoning is done from some POINT OF VIEW.**
- What is your point of view? What insights is it based on? What are its weaknesses?
  - What other points of view should be considered in reasoning through this problem? What are the strengths and weaknesses of these viewpoints? Are you fairly minded considering the insights behind these viewpoints?
5. **All reasoning is based on DATA, INFORMATION, and EVIDENCE.**
- To what extent is your reasoning supported by relevant data?
  - Do the data suggest explanations that differ from those you have given?
  - How clear, accurate, and relevant are the data to the question at issue?
  - How you gathered data sufficient to reaching a reasonable conclusion?
6. **All reasoning is exposed through, and shaped by CONCEPTS and THEORIES.**
- What key concepts and theories are guiding your reasoning?
  - What alternative explanations might be possible, given these concepts and theories?
  - Are you clear and precise in using concepts and theories in your reasoning?
  - Are you distorting ideas to fit your agenda?
7. **All reasoning contains INFERENCES or INTERPRETATIONS by which we draw CONCLUSIONS and give meaning to data.**
- To what extent do the data support your conclusions?
  - Are your references consistent with each other?
  - Are there other reasonable inferences that should be considered?
8. **All reasoning leads somewhere or has IMPLICATIONS and CONSEQUENCES.**
- What implications and consequences follow from your reading?
  - If we accept your line of reasoning, what implications or consequences are likely?

## Universal Intellectual Standards

Universal intellectual standards are standards which should be applied to thinking to ensure its quality. To be learned they must be taught explicitly. The ultimate goal, then is for these standards to become infused in the thinking of students, forming part of their inner voice, guiding them to reason better.

### Clarity

- Could you elaborate further on that point?
- Could you give me an illustration?
- Could you give me an example?

### Accuracy

- Is that really true?
- How could we check that?
- How could we find out if that is true?

### Precision

- Could you give me more details?

- Could you be more specific?
- Could you be more exact?

### Relevance

- How is that connected to the question?
- How does that bear on the problem?
- How does that help us with the issue?

### Depth

- What factors make this a difficult problem?



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- What are some of the complexities of this question?
- What are some of the difficulties we need to deal with?

## Breadth

- Do we need to consider another point of view?
- Do we need to look at this from another perspective?
- Do we need to look at this in other ways?

## Logic

- Does this all make sense together?
- Does your first paragraph fit in with your last?
- Does what you say follow from the evidence?

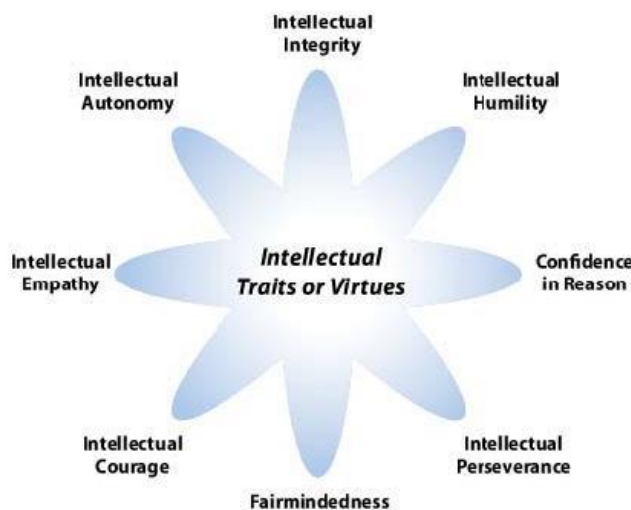
## Significance

- Is this the most important problem to consider?
- Is this the central idea to focus on?
- Which of these facts are most important?

## Fairness

- Are we considering all relevant viewpoints in good faith?
- Are we distorting some information to maintain our biased perspective?
- Are we more concerned about our vested interests than the common good?

## Essential Intellectual Traits or Virtues



### Intellectual Humility vs Intellectual Arrogance

Having a consciousness of the limits of one's knowledge, including a sensitivity to circumstances in which one's native egocentrism is like to function self-deceptively; sensitivity to bias, prejudice and limitations of one's viewpoint. Intellectual humility depends on recognizing one should not claim more than one actually knows. It does not imply spinelessness or submissiveness. It implies the lack of intellectual pretentiousness, boastfulness, or conceit, combined with insight into the logical foundations, or lack of such foundations, of one's beliefs.

### Intellectual Courage vs Intellectual Cowardice

Having a consciousness of the need to face and fairly address ideas, beliefs, or viewpoints toward

which we have strong negative emotions and to which we have not given a serious hearing. This courage is connected with the recognition that ideas considered dangerous or absurd are sometimes rationally justified (in whole or in part) and that conclusions and beliefs inculcated in us are sometimes false or misleading.

### Intellectual Courage vs Intellectual Cowardice

Having a consciousness of the need to imaginatively put oneself in the place of others to genuinely understand them, which requires the consciousness of our egocentric tendency to identify truth with our immediate perceptions of long-standing thought or belief. This trait correlates with the ability to reconstruct accurately the viewpoints and reasoning of others and to reason from premises, assumptions, and ideas other than our own.



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## Intellectual Autonomy vs Intellectual Conformity

Having rational control of one’s beliefs, values, and inferences. The ideal of critical thinking is to learn to think for oneself, to gain command over one’s thought processes. It entails a commitment to analyzing and evaluating beliefs on the basis of reason and evidence, to question when it is rational to question, to believe, and to conform when it is rational to conform.

## Intellectual Integrity vs Intellectual Hypocrisy

Recognition of the need to be true to one’s own thinking; to be consistent in the intellectual standards one applies; to hold one’s self to the same rigorous standards of evidence and proof to which one holds, one’s antagonists; the practice what one advocates for others; and to honestly admit discrepancies and inconsistencies in one’s own thought and action.

## Intellectual Perseverance vs Intellectual Laziness

Having a consciousness of the need to use intellectual insights and truth in spite of difficulties, obstacles, and frustrations; firm adherence to rational principles despite the irrational opposition of others; a sense of the need to struggle with confusion and unsettled questions over an extended period of time to achieve deeper understanding or insight.

## Confidence in Reason vs Distrust of Reason and Evidence

Confidence that, in the long run, one’s own higher interests and those of humankind at large will be best served by giving the freest play to reason, by encouraging people to come to their own conclusions by developing their own rational faculties; faith that, with proper encouragement and cultivation, people can learn to think for themselves, to form rational viewpoints, draw reasonable conclusions, think coherently and logically, persuade each other by reason and become reasonable persons, despite the deep-seated obstacles in the native character of the human mind and in society as we know it.

## Fair-mindedness vs Intellectual Unfairness

Having a consciousness of the need to treat all viewpoints alike, without reference to one’s own feelings or vested interests, or the feelings or vested interests of one’s friends, community or nation; implies adherence to intellectual standards without reference to one’s own advantage or the advantage one’s group.

