

## CRITICAL AND CREATIVE THINKING

**Critical Thinking** is the ability and willingness to assess claims and make objective judgements in the basis of well-supported reasons. It is the ability to look at flaws in arguments and resist claims that have no supporting evidence.

Critical thinking, however, is not merely negative thinking. It also fosters the ability to be *creative and constructive*- to come up with various possible explanations for events, think of implications of research findings, and apply new knowledge to a broad range of social and personal problems. You cannot separate critical thinking from creative thinking, for it is only when you question *what is* that you begin to imagine *what can be*.

### (DISCUSSION)

In part, learning to think critically means following the rules of logic. The following are eight essential ones:

1. **ASK QUESTIONS; be willing to wonder.** What is the one kind of question that most exasperates parents of young children? “Why is the sky blue?” “Why can’t I fly.” “ Why don’t pigs have wings?” Unfortunately, as children grow up, they tend to stop asking “why” questions. (Why do you think this is?). Have you ever reflected on a few questions you’d like to have answered:

Why are moths attracted to wool but indifferent to cotton? Why does the sun shine? Why is a rainbow arched? Why can you never find the end of the rainbow (and thus the pot of gold?).

The trigger mechanism for creative and critical thinking is the disposition to be curious. Asking, ‘what’s wrong here?’ and/or ‘why is this the way it is, and how did it come to be that way?’ leads to the identification of problems and challenges. Always remember to question everything, every procedure that has been used for years, even when they are successful. Receive wisdom wisely; do not be fearful to question and criticize.

2. **DEFINE THE PROBLEM.** Once you have raised a question, the next step is to identify the issues in clear and concrete terms. “What makes people happy?” is a fine question for midnight reveries, but it will not lead to answers unless you have specified what you mean by “happy.” Does happiness require being in a constant state of euphoria all the time? How much of the

time? Does it simply mean feeling a pleasant contentment with life? Does it mean the absence of serious problems or pain?

One difference between conjecture and the application of fact to support a premise of question has to do with how the question is formulated. “How does hypnosis improve memory events can be presented for conjecture or speculation, but notice that this question presupposes that hypnosis does reliably improve memory. A critical thinker would ask a more neutral question, allowing for other results: “Does hypnosis affect memory and if so how?” And then from this, formulate a premise: Hypnosis can increase memory *errors*, and some hypnotized people will make up details of an event that never happened.

- 3. EXAMINE THE EVIDENCE.** Have you ever heard someone in the heat of an argument exclaim, “I just know it’s true, no matter what you say” or “That’s my opinion; nothing’s going to change it” or “If you don’t understand my position, I can’t explain it any more than I already have”? Accepting a conclusion without evidence, or expecting others to do so, is a sure sign of uncritical thinking. It implies that all opinions are equal, and they are not. A critical thinker asks, *What evidence supports or refutes this argument and its opposition. How reliable is the evidence?*
- 4. ANALYSE ASSUMPTIONS AND BIASES.** Critical thinkers evaluate the assumptions and biases that lie behind assumptions. They ask how these assumptions and biases influence claims and conclusions in the books they read, the political speeches they hear, the news programs they watch and the ads that bombard them every day. Here is an example: The manufacturer of a popular pain reliever advertises that hospitals prefer its product of all others. The natural assumption – the one the advertiser wants you to make – is that this product is better than all others. Actually, hospitals prefer the product because they get a bigger discount on it than on its competitors.

Critical thinkers also are aware of their own assumptions and are willing to question them. Critical thinking requires that we examine our biases when the evidence contradicts them. Everyone, of course, carries around a headful of assumptions about how the world works: Do people have free will or are they constrained by biology and upbringing? Are government programs the solution to poverty, or would private programs do better? If we do not make our assumptions explicit, our ability to interpret evidence objectivity can be seriously impaired.

- 5. AVOID EMOTIONAL REASONING: “If I feel this way, it must be true.”** Emotion has a place in critical thinking. Passionate commitment to a view

can motivate a person to think boldly without fear of what others will say, to defend an unpopular idea, and to seek evidence for creative new theories. Moreover, in the absence of emotions such as compassion and pity, logic and reason can lead to misguided or even destructive decisions and actions. Indeed, some of the most sadistic killers and military strategists in history have been bright brilliant thinkers who lack compassion but are heavy on logic and reason (their own of course).

When “gut” feelings replace clear thinking, however, the results are equally dangerous. Persecutions and wars are sometimes in part a result of gut feeling. Because our feelings seem so right, it is hard to understand that people with opposing viewpoints feel just as strongly. But they usually do, and this means that feelings alone are not a reliable guide to the truth.

You probably hold strong feelings about many topics, such as drugs, abortion, astrology, the causes of crime, racism, gender differences, welfare. In order to make informed decisions about your personal life, how to vote and what social policies to endorse, you will need to do more than rely on these feelings; you will also need to consider the evidence that applies to such issues. Disagreement with what you read is fine; it means that you are reading actively. All we ask is that you ask yourself *why* you are disagreeing; because the results cause you to question some assumption that you hold to be true, or because the evidence is unpersuasive.

6. **DO NOT OVERSIMPLIFY.** A critical thinker looks beyond the obvious, resists easy generalizations and rejects either/or thinking. For example, when life serves up a miserable situation, should you deny your problems or face them head-on? Either answer oversimplifies. Sometimes denial can keep people from solving their problems, but at other times, it helps them get through painful situations that can't be changed.

A critical thinker avoids *arguing by anecdote*: generalizing from a personal experience or a few examples to everyone. One crime committed by a paroled ex-convict means that the whole parole program is bad; one friend who spends the weekend listening to a motivational speaker and swears it changed his life, means that the program works for everybody. Anecdotal generalizations are the source of stereotyping as well: One dishonest welfare mother means that all welfare recipients are dishonest; one encounter with an unconventional Californian meant that they are all flaky. And many people make themselves miserable by generalizing from a single unfortunate event to a whole patterns of defeat: “ I did so poorly on this test and not I'll never get through this class or get through college or have a good job....or anything.” A *critical thinker wants more evidence than one or two stories before drawing generalizations.*

7. **CONSIDER OTHER INTERPRETATIONS.** A critical thinker creatively formulates hypotheses that offer reasonable explanations of characteristics, behavior and events. The ultimate goal is to find an explanation that accounts for the most evidence with the fewest assumptions. This is called the principle of Occam's Razor, after the fourteenth-century philosopher William of Occam, who proposed it. For example, suppose a fortune teller offers to read your palm and predict your future, One of two things must be true:

The fortune teller can actually sort out the infinite number of Interactions among people, animals, events, objects and Circumstances that could affect your life, and know for sure the outcome. Moreover, this particular fortune teller is able to alter all the known laws of physics and defy the hundreds of studies showing that no one, under proper procedures for validating psychic predictions, has been able to read the future.

or

The fortune teller is faking it.

According to the maxim of Occam's Razor, the second alternative is preferable because it requires the fewest assumptions.

But critical thinkers are also careful not to shut out alternative explanations too soon. They generate as many interpretations of the evidence as possible before settling on the most likely one.

8. **TOLERATE UNCERTAINTY.** Ultimately, learning to think critically teaches us one of the hardest lessons of life: how to live with uncertainty. It is important to examine the evidence before drawing conclusions, yet sometimes there is little or no evidence to go on. Sometimes the evidence merely allows is to draw tentative conclusions. And sometimes the evidence seems good enough to permit strong conclusions...until exasperatingly, new evidence throws our beliefs into disarray. Critical thinkers are willing to accept this state of uncertainty. They are not afraid to say, "I don't know" or "I'm not sure." This admission is not an evasion but a spur to further creative inquiry.

Critical thinking is a process, not a once-and-for-all accomplishment. No one ever becomes a perfect critical thinker, unaffected by emotional reasoning and wishful thinking in at least some areas of life. We are all less open-minded than we think, more reluctant to submit our own beliefs to honest

analysis. That is why cleverness is not the same as critical thinking. Sharp debaters can learn to poke holes in the arguments of others, while twisting facts or conveniently ignoring arguments that might contradict their own position. True critical thinking is fair-mindedness brought into the heart of everyday life.