

Deconstructing  
the  
self

Habits of A Critical Thinker		
<p><b>Awareness Observes</b>                      self and others in process of thinking                      feelings                      level of concentration                      confusion and clarity</p>	<p><b>Self-Control</b>                      Restrains impulses to                      Stereotype                      Jump to conclusions                      Jump to judgments                      Glance instead of observe                      Hurry to finish                      Take things for granted                      Not ask questions                      Not verify information                      Cover up mistakes                      Avoid what is difficult</p> <p><b>Stands by Values</b>                      To discover and express what is true                      To be fair, reliable, respectful, and responsible to self and others                      To seek truth before rightness; to be willing to admit mistakes and concede to a better argument</p>	<p><b>Skills</b>                      Suspends judgments when appropriate                      Listens and observes                      Persists to gather and understand information, get across communications, and complete problems                      Methodically separates facts from inferences, from opinions, and evaluations                      Checks for evidence and valid reasoning                      Recognizes assumptions                      Views content in terms of frame of reference                      Looks for a viewpoint's frame of reference                      Uses words with precision and sensitivity to word definition, connotations, slant, ambiguity                      Reads critically                      Uses writing to improve thinking and get ideas across                      Can prepare a persuasive argument based on evidence and valid reasoning                      Recognizes fallacies of reasoning                      Recognizes unfair persuasion and propaganda</p>

Figure I.1 Chart: Habits of a Critical Thinker

When we look up the word *thinking* in a dictionary, we find it covers nineteen different mental operations. These range from reasoning to solving problems, to concealing and discovering ideas, to remembering, to daydreaming. Some of these forms are conscious and directed, whereas others seem to operate on their own without control or awareness. When we need to solve a math problem, we focus and concentrate. When we relax, thoughts and fantasies can come and go without direction. In this book, we will be using the word *thinking* in the sense of *purposeful mental activity*.

What then is critical thinking? Most of us associate the word *critical* with negativity or habitual fault-finding. Yet if we look at the history of the word, we can see that connotation was not in its original meaning. The root of *critical* comes from *skeri*, which means to cut, separate, or sift; thus, its original idea was to take something apart or to analyze it. Moreover, *critical* is also related to the Greek word *kriterion*, which means a standard for judging. Putting together these two original ideas, we see that the word *critical* means *analyzing on the basis of a standard*. When we are negative and fault-finding, our standards are not clear, and our purpose is not that of developing reliable knowledge.

Dictionaries do not, as yet, define critical thinking, nor is there one definition that all teachers in this field can agree upon; today there are as many definitions of critical thinking as there are writers on the subject. But all would agree that critical thinking is a purposeful form of mental activity; many would agree that it involves learning conscious awareness of the thinking process itself. Finally, all agree that it is one guided by clear standards.

Now what are the standards of critical thinking? They are the same intellectual standards scientists and scholars have used for centuries to evaluate the reliability of reasoning and information. They include clarity, accuracy, precision, consistency, relevance, reliability, soundness, completeness, and fairness. All these standards help us to aim for truth or to come as close to truth as we can.

When we study critical thinking, we gain knowledge of norms and rules for clear and effective thinking. While the norms embody the standards, the rules help us measure them. Each chapter of this text explains norms through rules and examples that compare skilled to unskilled forms of thinking.

What is most difficult about learning critical thinking, however, is that it cannot be mastered through knowledge of norms and rules alone. Critical thinking is an active skill-building process, not a subject for passive academic study. We need to learn how to apply these standards to our own thinking and help others do the same. And when we accept the challenge of such learning, we go through a process of *unlearning* old

If your discussion moved your thinking from certainty into uncertainty, you may feel somewhat confused or unsettled at this time. The we will use for this unsettled state is *disequilibrium*. We feel this kind of discomfort when we need more time to integrate something unfamiliar. Moreover, we feel vulnerable when our thinking is exposed. Even in school, where we are committed to learning, it is not always easy to say "I don't know," "I am confused," or "I was wrong." We have to ascertain if it is safe to be so honest.

Yet if we want to learn new skills, we have to be willing to feel awkward at times. We have to expose our thinking before we can refine it. Such a process requires humility, sensitivity, kindness, and honor from everyone involved—from instructors as well as from students. Indeed, if we are not feeling awkward, we may not be really learning.

In review, this assignment was meant to remind you

- what occurs when you think on your own;
- how we can further our thinking together in groups;
- how such a process can teach us more about thinking.

### What Is Critical Thinking?

Critical thinking brings conscious awareness, skills, and standards to the process of observing, analyzing, reasoning, evaluating, reading, and communicating.

Thinking is purposeful mental activity. Critical means to take something apart and analyze it on the basis of standards.

Critical comes from *skeri* (Anglo Saxon) = to cut, separate, sift; and *kriterion* (Greek) = a standard for judging.

#### Standards of Critical Thinking

Clarity	Precision	Accuracy	Relevance
Completeness	Soundness	Reliability	Fairness

## Facts and Reality

What we call facts do not necessarily represent what is real and true.

If you were to stand on a street corner and ask each passerby to tell you what a fact is, most people would tell you that a fact is what is real and true. However, this common notion is mistaken. Facts are our interpretations of what is real and true, but the problem with interpretations is that they can be wrong. Human history provides us with many examples.

Every school child knows that the long-accepted "fact" that the earth was flat was an error based on limited perception. In every century mistaken notions taken for fact come and go, such as the idea that bathing is unhealthy, that blood-letting cures the sick, that women are inferior to men, that some races are inferior to others. Toward the end of the twentieth century, science and government assured us that pesticides would not harm human beings, nor lead paint, nor buried toxic wastes. Such false notions remind us that what we call facts are the creations of human minds, and, for this reason, subject to error. Most of us grew up believing that 98.6 degrees Fahrenheit represented normal body temperature. This medical "fact" was commonly accepted until 1992, when new investigations revealed that 98.6 wasn't normal at all; indeed, it was downright unusual. Indeed, it was found that healthy people thrive between 96.0 and 99.9, depending on the individual, time of day, sex, and race. Science moved forward in this case because facts long assumed to be true were re-examined. We need to continually re-evaluate what we call our "facts" in the light of the feedback received from their tests against reality.

Now, what then is reality?

Reality is another term that we all use every day, yet few of us can define. It remains a mystery illusive of a definition that can be agreed upon. In the previous chapter, you were offered a number of very different definitions, some by philosophers who have long debated the nature of reality. Philosophers have divided themselves into two camps: those who consider reality to be relative and those who view reality as absolute. In other words, some say the observer determines what reality is, while others say that reality is what it is—regardless of what people may think about it. Yet, no matter what side we may lean toward ourselves, we must concede that our judgments do change about the truth of some facts.

In summary, facts are not the equivalent of truths or reality; they are, at best, only our decisions about what seems to be most real. Human

beings need facts because they need certainties in order to proceed through the world. But we should not forget that human beings are fallible.

### Discussion Break Questions

1. State two facts that you are certain are true.
2. State two facts that you are certain will never change.
3. State two facts that you are certain will change.

## Facts Are Not Absolutes

The most we can say about any fact is that its certainty is higher or lower in probability.

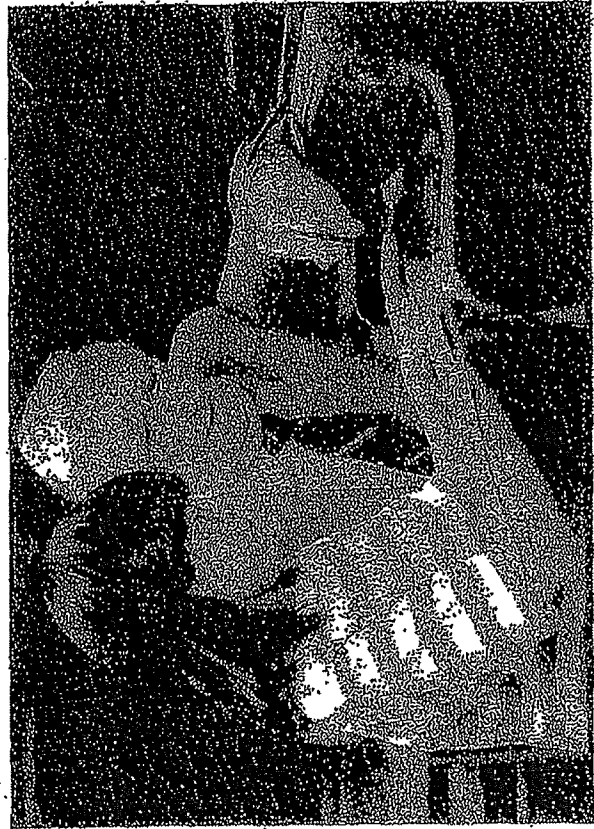
Facts that are most useful to us are those that have been repeatedly verified by many sources over time. Our lives and welfare depend on these certainties. On this planet we know the facts of gravity limit what we can do and not do safely; we know we can plan our daily schedules around the rising and the setting of the sun. But none can say that the orbit of this planet or its condition of gravity will always remain the same. We live in a physical universe that is eternally changing—from the invisible-to-the-eye subatomic level to obvious levels of wrinkles in our skin, the courses of rivers, the growth of children, and the motion of the sun and stars. Furthermore, modern technology is accelerating all kinds of unexpected environmental changes.

The sciences have their own way of coming to terms with the problem of certainties. Many statements that most of us would call facts are considered *probability* statements by the sciences. If a thermometer says the temperature is 65 degrees, a scientist would say that there is a 99 percent chance that the temperature is between 62.5 and 67.5 degrees. This would take into account any inaccuracies of the instrument. *Certainty* in science is usually considered to be a probability that is approaching certainty. In our human social history, beliefs have often been mistaken for facts that sometimes change as human knowledge evolves. In the eighteenth century, and earlier, the belief that witches existed and caused malevolent harm to others was assumed to be fact. In nineteenth-century England, parents believed it necessary to "break the wills" of their children and beat them regularly in order

to "civilize" them. Today neither of these beliefs are commonly considered true. Thus, many of our present cultural assumptions, assumed to represent facts, may also be discovered mistaken over time. It is because of this human tendency to confuse beliefs with facts that a healthy society needs to preserve the freedom to debate, the right to disagree, the right to investigate one another's claims about facts, truths, and realities. Indeed, this is the only kind of environment in which critical thinking can flourish. A government that seeks absolute power over its citizens suppresses every stimulus to critical thinking. It buys out the media, censors a dissident press, discourages public protests, closes down schools, and kills those who dissent. Critical thinking is a fragile product of civilizations that value the freedom to search for truth. For the advancement of human knowledge and welfare, we need to value the right to continually reexamine whatever equations are made between reality, truth, and the "facts."

#### Discussion Break Questions

1. Discuss a belief that you feel absolutely certain about. Discuss a belief that you are uncertain about.
2. Give an example of some methods used to suppress critical thinking.



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## 4) Part I: Issues of Critical Thinking

## Facts and Social Pressure

Our need to have our perceptions verified by others also makes us susceptible to manipulation.

We only need to use our senses and perceptions to determine some facts, however, to be sure of their accuracy, we need confirmation from other sources:

1. JOHN: "Tell me, am I asleep or awake?"  
MARY: "You are awake."
2. BILL: "Did that woman make a pass at me or did I imagine it?"  
JANE: "She made a pass, alright."
3. EMAN: "I think this suit is too large for me. What do you think?"  
MAZ: "Much too large."
4. YVANA: "My checking account balances."  
NORMA: "My figures show you are correct."

On each of these examples, a personal examination alone could not determine what was real. To test the perception accuracy, confirmation was needed from others. Confirmation takes us out of disequilibrium and restores us to equilibrium. The reverse side of this principle is that someone who contradicts perceptions we feel certain about can make us feel uncomfortable, angry, even crazy.

5. JESS: "I didn't have too much to drink last night."  
WANDA: "Yes, you did! You were drunk!"
6. CAULD: "I don't want to eat my carrots. They taste icky."  
PASSAN: "Yes, you do want to eat them. You are just imagining things. They taste good."

As these examples illustrate, disagreements about perceptions result in conflicts. Sometimes conflicts can be settled by arbiters: an umpire in a game, a speedometer in a car, or a thermometer on the wall. But without an arbiter, we can be left feeling off balance and unsettled.

This human need for confirmation leaves us vulnerable to manipulation. The truth of this principle was demonstrated by American psychologist Solomon Asch, who conducted some simple experiments to test how a group could affect the perceptions of an individual. He found that in a small group, people are willing to deny the evidence of their own senses if the other members of the group interpret reality differently. In one experiment, Asch assembled groups of seven to nine college students

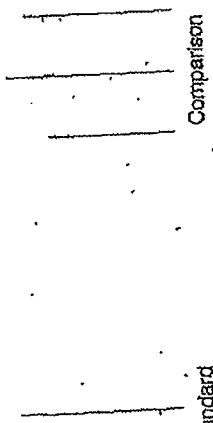


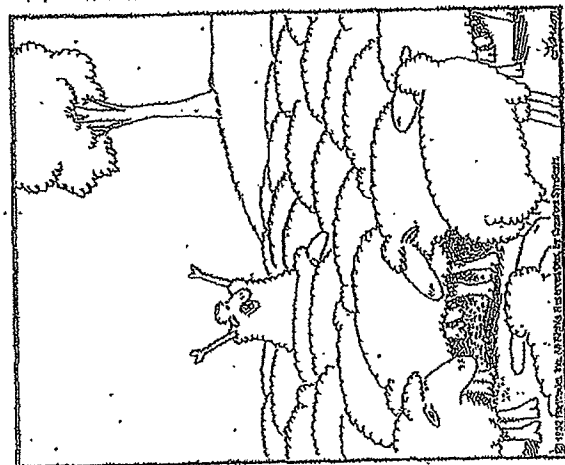
Figure 3.1 Standard and Comparison Lines in the Asch Experiment

in what was described as a test of visual judgment. In each group, only one of the students was actually a subject in the experiment; the others were the researcher's secret accomplices. The researcher informed the students that they would be comparing the lengths of lines. He showed them two white cards. On the first was a single vertical black line—the standard—whose length was to be matched. On the second white card were vertical lines of various lengths. The subjects were to choose the one line of the same length as the standard line (see Figure 3.1).

A series of eighteen trials was conducted. When the first pair of cards was presented, the group gave a unanimous judgment. The same thing happened on the second trial. In twelve of the remaining sixteen trials, however, all of Asch's accomplices agreed on what was clearly an incorrect answer. The real subject of the experiment was left to react. In about a third of the cases, the subject yielded to the majority and conformed to its decision. In separate experiments with a control group consisting of only genuine subjects, Asch found that people made mistakes less than 1 percent of the time. Subsequent interviews with those who yielded to the majority revealed that only a few of them had actually believed that the majority choice was correct. They admitted that they thought they had judged the length of the lines correctly but did not want to "rock the boat" or "spoil the results" by giving the right answer. And then there were those who had doubted their own perceptions and had concluded that they had better hide this from the others. The test made a significant demonstration of the power of consensus to bring about conformity and to make a person invalidate his or her own perception.\*

\*Figure and text adapted from Solomon Asch, "Effects of Group Pressure upon Modification and Distortion of Judgments," in E. Proshansky and B. Seidenberg (eds.), *Basic Studies in Social Psychology* (New York: Holt, Rinehart & Winston, 1965), pp. 393-401. Used with permission of CBS College Publishing.

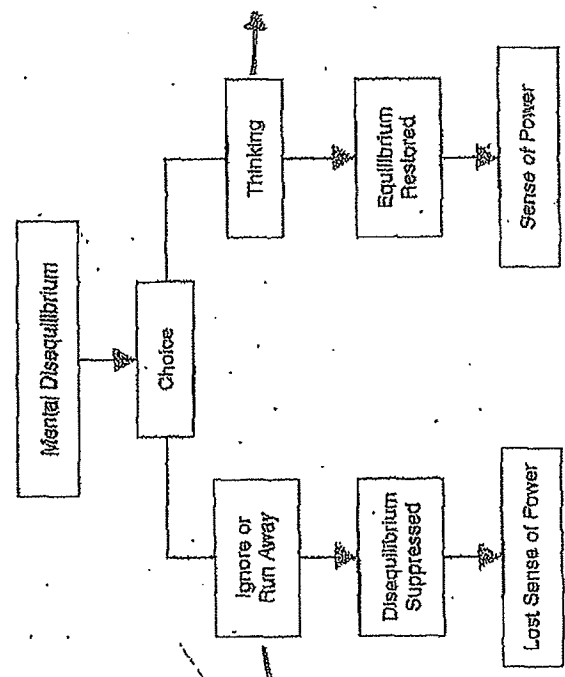
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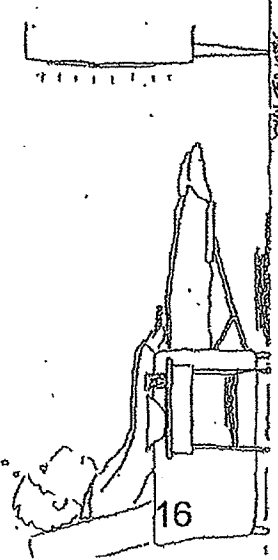
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"Wait! Wait! Listen to me! -- We don't have to be just sheep!"

A Choice for Thinking



NOTHING MUCH ON THE TUBE...  
OH WELL, STILL BEATS THINKING.



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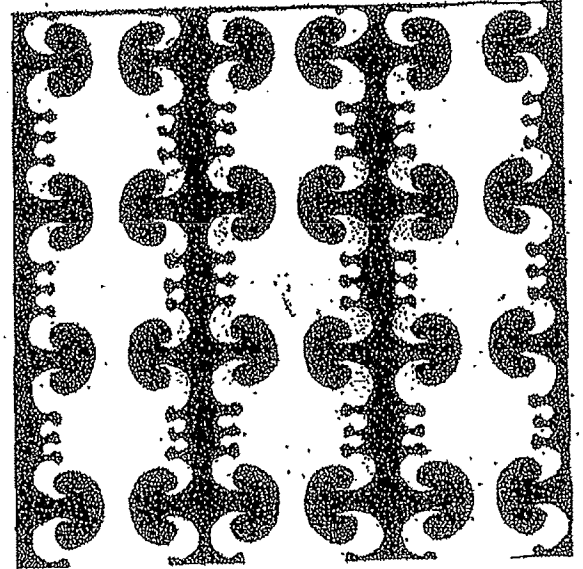
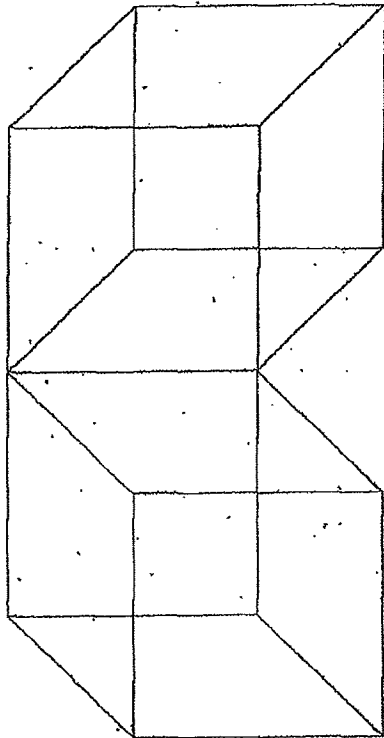


Figure 1.3 Can you see in this design the interaction between positive and negative space described in "The Innocent Eye"? Is either less important than the other?

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EGL 220  
Chisholm  
Some Quotes on Truth (Arguments from Authority)

Albert Einstein:  
No amount of experimentation can ever prove me right; a single experiment can prove me wrong.

Albert Einstein:  
Whoever undertakes to set himself up as a judge of Truth and Knowledge is shipwrecked by the laughter of the gods.

Andre Gide:  
Believe those who are seeking the truth; doubt those who find it.

Buddha:  
Believe nothing just because a so-called wise person said it. Believe nothing just because a belief is generally held. Believe nothing just because it is said in ancient books. Believe nothing just because it is said to be of divine origin. Believe nothing just because someone else believes it. Believe only what you yourself test and judge to be true. [paraphrased]

Clarence Darrow:  
Chase after the truth like all hell and you'll free yourself, even though you never touch its coattails.

David Hume:  
Truth springs from argument amongst friends.

George Bernard Shaw:  
New opinions often appear first as jokes and fancies, then as blasphemies and treason, then as questions open to discussion, and finally as established truths.

Gloria Steinem:  
The truth will set you free. But first, it will piss you off.

Mark Twain:  
Always tell the truth. That way, you don't have to remember what you said.

Oliver Wendell Holmes, Sr.:  
Insanity is often the logic of an accurate mind overtaken.

Pierre Abelard:  
The beginning of wisdom is found in doubting; by doubting we come to the question, and by seeking we may come upon the truth.

William James:  
Truths emerge from facts, but they dip forward into facts again and add to them; which facts again create or reveal new truth (the word is indifferent) and so on indefinitely. The 'facts' themselves meanwhile are not true. They simply are. Truth is the function of the beliefs that start and terminate among them.

Anatole France:  
Truth has few friends; those few are suicides.

Stephen King:  
Fiction is a lie with truth in it.

Ignore  
this  
page

Ad Presentation