



# Cultivating A Critical Thinking Mindset<sup>1</sup>

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Since the publication of the [California Critical Thinking Disposition Inventory \(CCTDI\)](#)<sup>2</sup> our research team has often been asked what a person might do in order to develop strong critical thinking habits of mind. The answer, as it turns out, is both easier and more difficult than might at first be imagined. This essay offers specific suggestions – practices we can incorporate into daily living. When you see the list you will realize immediately that while simple they can be challenging.

## THE DEVELOPMENT OF CHARACTER

The development of the consistent intention to apply critical thinking skills to learning, problem solving, and decision making requires the cultivation of enduringly strong positive critical thinking habits of mind. These habits of mind, that collectively can be called the disposition toward critical thinking, must become a central part of one's character. So let us begin with what we know about the importance of mindset, along with skills and knowledge, in character formation.

From the time of the Athenians and the Spartans, if not earlier, educators have concerned themselves with how best to instill those virtues which the culture prizes and how best to root out those vices which the culture abhors. Think of military education as one example and the preparation of scholars as another. The education of professionals in every field includes not only the imparting of knowledge and the exercising of skills, but the development of the mindset which is most valued by that profession. Think of all that goes into the complete education of religious ministers, musicians, scientists, police officers, business professionals, thespians, attorneys, or health care professionals. The cultivation of the mindset of every professional field requires the development in those who would be part of that professional community of a set of shared set of values, intentions, and beliefs. And, in many cases the vocabulary, behaviors, expectations, and perspectives which enable us to identify and describe those who practice that profession.

The cultivation of the attributes of one's character is the product of a socialization process. Character is shaped by the consistent effort of one's own will and the demands, guidance, modeling, and influence of teachers and mentors. Each day we discipline ourselves to behave in ways that are consistent with the attributes we hope to cultivate is a positive step toward making that attribute an enduring piece of who we are. Each time we knowingly indulge in behavior that manifests the attribute's opposite pole is a moment when we dislodge the habit we are hoping ultimately to possess.

Let us apply this general knowledge about the development of the attributes of one's character to the critical thinking mindset. A person with a strong disposition toward critical thinking has the consistent internal motivation to engage problems and to make decisions by using critical thinking.<sup>3</sup> Operationally this means three things: The person consistently values critical thinking, believes that using critical thinking skills offers the greatest promise for reaching good judgments, and intends to approach problems and decisions by applying critical thinking skills as best as he or she can. This combination of values, beliefs, and intentions forms the habits of mind that dispose the person toward critical thinking.<sup>4</sup> What might these look like in daily living? Someone strongly disposed toward critical thinking would probably agree with the following statements:

- "I hate talk shows where people shout their opinions but never give any reasons at all."
- "Figuring out what people really mean by what they say is important to me."
- "I always do better in jobs where I'm expected to think things out for myself."
- "I hold off making decisions until I have thought through all the viable options."



- “Rather than relying on someone else’s notes, I prefer to read the material myself.”
- “I try to see the merit in another’s opinion, even if I reject it later.”
- “Even if a problem is tougher than I expected, I will keep working on it.”
- “Making intelligent decisions is more important than winning arguments.”

Persons who display a strong positive disposition toward critical thinking are described as “having a critical spirit,” or as people who are “mindful,” “reflective,” and “meta-cognitive.” These expressions give a person credit for consistently applying their critical thinking skills to whatever problem, question, or issue is at hand.

People with a critical spirit tend to ask good questions, probe deeply for the truth, inquire fully into matters, and strive to anticipate the consequences of various options. In reality, our skills may or may not be strong enough, our knowledge may or may not be adequate to the task at hand. The problem may or may not be too difficult for us. Forces beyond our control might or might not determine the actual outcome. None of that cancels out the positive critical thinking habits of mind with which strong critical thinkers strive to approach the problems life sends their way.

A person with weak or negative critical thinking dispositions might disagree with the previous statements and be more likely to agree with these:

- “I prefer jobs where the supervisor says exactly what to do and exactly how to do it.”
- “No matter how complex the problem, you can bet there will be a simple solution.”
- “I don’t waste time looking things up.”
- “If my belief is truly sincere, evidence to the contrary is irrelevant.”
- “Selling an idea is like selling cars; you say whatever works.”
- “Why do the research when you can use made-up the quotes and phony up the data?”
- “I take a lot on faith because questioning the fundamentals frightens me.”
- “There is no point in trying to understand what terrorists are thinking.”

When it comes to approaching specific questions, issues, decisions or problems, people with a weak or negative critical thinking disposition are apt to be impulsive, reactive, muddle-headed, disorganized, overly simplistic, spotty about getting relevant information, likely to apply unreasonable criteria, easily distracted, ready to give up at the least hint of difficulty, intent on a solution that is more detailed than is possible, or too readily satisfied with some uselessly vague response. They might substitute aggression for thought, emotional manipulation for reasons, or volume for evidence.

## PRELIMINARY SELF-ASSESSMENT

It is natural to wonder about our own disposition. The “Critical Thinking Mindset Self-Rating Form” on the next page offers one way of reflecting on our own values, beliefs, and intentions about the application of critical thinking to life’s daily problems and decisions. As noted on the form itself, “This tool offers only a rough approximation with regard to a brief moment in time.” Take the opportunity, if you wish, to complete the self-assessment now. Keep in mind that this measure does not assess critical thinking skills. Rather, this tool permits one to reflect on whether one’s own behavior over the past two days manifested a positive, ambivalent, or negative tendency toward engaging in thoughtful, reflective, and fair-minded judgments about what to believe or what to do.



## Critical Thinking Mindset Self-Rating Form

Answer yes or no to each. Can I **name any specific instances over the past two days** when I:

- 1 was courageous enough to ask tough questions about some of my longest held and most cherished beliefs?
- 2 backed away from questions that might undercut some of my longest held and most cherished beliefs?
- 3 showed tolerance toward the beliefs, ideas, or opinions of someone with whom I disagreed?
- 4 tried to find information to build up my side of an argument but not the other side?
- 5 tried to think ahead and anticipate the consequences of various options?
- 6 laughed at what other people said and made fun of their beliefs, values, opinion, or points of views?
- 7 made a serious effort to be analytical about the foreseeable outcomes of my decisions?
- 8 manipulated information to suit my own purposes?
- 9 encouraged peers not to dismiss out of hand the opinions and ideas other people offered?
- 10 acted with disregard for the possible adverse consequences of my choices?
- 11 organized for myself a thoughtfully systematic approach to a question or issue?
- 12 jumped in and tried to solve a problem without first thinking about how to approach it?
- 13 approached a challenging problem with confidence that I could think it through?
- 14 instead of working through a question for myself, took the easy way out and asked someone else for the answer?
- 15 read a report, newspaper, or book chapter or watched the world news or a documentary just to learn something new?
- 16 put zero effort into learning something new until I saw the immediate utility in doing so?
- 17 showed how strong I was by being willing to honestly reconsider a decision?
- 18 showed how strong I was by refusing to change my mind?
- 19 attended to variations in circumstances, contexts, and situations in coming to a decision?
- 20 refused to reconsider my position on an issue in light of differences in context, situations, or circumstances?

Give yourself 5 points for every "Yes" on odd numbered items and for every "No" on even numbered items. If your total is 70 or above, you are rating your disposition toward critical thinking over the past two days as generally positive. Scores of 50 or lower indicate a self-rating that is averse or hostile toward critical thinking over the past two days. Scores between 50 and 70 show that you would rate yourself as displaying an ambivalent or mixed overall disposition toward critical thinking over the past two days.

If you have described yourself honestly, this self-rating form can offer a rough estimate of what you think your overall disposition toward critical thinking has been in the past two days. Interpret results on this tool cautiously. At best this tool offers only a rough approximation with regard to a brief moment in time. Other tools are more refined, such as the [California Critical Thinking Disposition Inventory](#), which gives results for each of the seven critical thinking habits of mind.

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## POSITIVE AND NEGATIVE CRITICAL THINKING HABITS OF MIND

The broad understanding of being disposed toward using critical thinking, or disposed away from using critical thinking, has been the object of empirical research in the cognitive sciences since the early 1990s. This research has given greater precision to the analysis and measurement of the dispositional dimension of critical thinking.

One research approach to identifying the elements in a positive critical thinking mindset involved asking thousands of people to indicate the extent to which they agreed or disagreed with a long list of statements, not unlike those in the two short lists presented above. Using statistical analysis, these researchers identified seven measurable aspects within the overall disposition toward critical thinking. We can think of these as the seven positive critical thinking habits of mind.<sup>5</sup> Based on this research, we can describe someone who has all seven positive critical thinking habits of mind as a person who is:

- **Truth-seeking**—meaning that the person has intellectual integrity and a courageous desire to actively strive for the best possible knowledge in any given situation. A truth-seeker asks probing questions and follows reasons and evidence wherever they lead, even if the results go against his or her cherished beliefs.
- **Open-minded**—meaning that the person is tolerant of divergent views and sensitive to the possibility of his or her own possible biases. An open-minded person respects the right of others to have different opinions.
- **Analytical**—meaning that the person is habitually alert to potential problems and vigilant in anticipating consequences and trying to foresee short-term and long-term outcomes of events, decisions, and actions. Another word to describe this habit of mind might be “foresightful.”
- **Systematic**—meaning that the person consistently endeavors to take an organized and thorough approach to identifying and resolving problems. The systematic person is orderly, focused, persistent, and diligent in his or her approach to problem solving, learning, and inquiry.
- **Confident in reasoning**—meaning that the person is trustful of his or her own reasoning skills to yield good judgments. A person’s or a group’s confidence in their own critical thinking may or may not be warranted, which is another matter.
- **Inquisitive**—meaning that the person habitually strives to be well informed, wants to know how things work, and seeks to learn new things about a wide range of topics, even if the immediate utility of knowing those things is not directly evident. The inquisitive person has a strong sense of intellectual curiosity.
- **Judicious**—meaning that the person approaches problems with a sense that some are ill structured and some can have more than one plausible solution. The judicious person has the cognitive maturity to realize that many questions and issues are not black and white and that, at times, judgments must be made in contexts of uncertainty.



After the measurement tools were refined and validated for use in data gathering, the results of repeated samplings showed that some people are strongly positive on one or more of the seven positive mindset attributes. Some people are ambivalent or negatively disposed on one or more of the seven.

We can associate a name to the negative end of the scale for each of the seven, just as we associated a name with the positive end of each scale. The “Critical Thinking Habits of Mind” chart to the right lists the names, for both positive and negative attributes. A person’s individual dispositional portrait emerges from the seven, for a person may be positive, ambivalent, or negative on each.



#### Some Habits are Desirable, Others are Not

The expressions *mental disciplines* and *mental virtues* can be used to refer to *habits of mind* as well. The word *disciplines* in a military context and the word *virtues* in an ethical context both suggest something positive. We use *habits of mind*, or at times *personal attributes*, or *mindset elements*, because these expressions are neutral. Some habits of mind, personal attributes, or mindset elements are positive, others not. A habit of mind like truth-seeking is positive. Other habits of mind, like indifference or intellectual dishonesty, are negative.

## THE INSUFFICIENCY OF CRITICAL THINKING ALONE

In the award winning film *Philadelphia*, Denzel Washington plays a personal liability litigator who is not above increasing the amount a client seeks for “pain and suffering” by hinting to the client that he may have more medical problems than the client had at first noticed. Locate the film and watch the scene where a new potential client, played by Tom Hanks, visits Washington’s office seeking representation. The scene starts out with Denzel Washington talking to a different client—a man who wants to sue the city over a foolish accident that the man brought upon himself. The scene establishes that Washington is a hungry lawyer who will take almost any case. Tom Hanks comes into the office and says that he wants to sue his former employer, believing that he was wrongly fired from his job because he has AIDS. You would think that Washington would jump at this opportunity. There is a lot of money to be made if he can win the case. Truth-seeking demands that the real reason for the firing be brought to light. But at this point in the story, Washington declines to take the case.

The filmmakers skillfully manage camera angles, lighting, and body language to show what Washington is thinking as he considers what to do. His eyes focus on the picture of his wife and child, on the skin lesion on Hanks’s head, and on the cigars and other things Hanks touches. The story takes place during the early years when the general public did not understand AIDS well at all. It was a time when prejudices, homophobia, and misinformation surrounded the disease. Washington’s character portrays the uncertainty and misplaced fears of the U.S. public at that time. Not understanding AIDS or being misinformed, Washington’s character is frightened for himself and for his family. Notice how he stands in the very far corner of his office, as physically far away from Hanks’s character as possible. He wipes his hand against his trousers after shaking hands. The nonverbal thinking cues are so well done by the filmmakers that we are not surprised when Washington, having thought things through, refuses to take the case.



There is no question that critical thinking is wonderfully powerful. Yet, by itself it is incomplete. We need knowledge, values, and sensitivities to guide our thinking. Washington's character is sensitive to what he thinks are the dangers of the disease and what he believes (wrongly) about the ways it might be transmitted. His character uses his critical thinking skills, which turn out to be quite formidable as the film progresses. But his beliefs about AIDS are simply wrong. He makes a judgment at the time not to represent Hanks's character. It is not the same judgment he will make later in the film, after he becomes better informed. Fortunately, he has the open-mindedness to entertain the possibility of representing Hanks's character, that perhaps Hanks's character does have a winnable case, and that perhaps the risks associated with AIDS are not as great as he had at first imagined. He has the inquisitiveness and the truth-seeking skills to gather more accurate information. And he has the judiciousness to reconsider and to change his mind.

**“If we were compelled to make a choice between these personal attributes [of a thoughtful person] and knowledge about the principles of logical reasoning together with some degree of technical skill manipulating special logical processes, we should decide for the former.”**

**John Dewey, *How We Think*<sup>6</sup>**

To get a clearer sense of the colossal problems that result from our collective failures to anticipate consequences, watch the documentary film *The Unforeseen* (2007, directed by Laura Dunn). It is the remarkable story of the loss of quality of life and environmental degradation associated with real estate development in Austin, Texas, over the past 50 years. What if the city planners or the developers, when undertaking their due diligence, actually became aware from the evidence that they were setting the stage for serious future environmental problems? And what if, knowing that, they decided to move ahead anyway with the project? Thinking about these hypothetical questions makes us wonder about the ethics of the decision makers involved. Similarly, thinking about Denzel Washington's character in *Philadelphia*, raises the question: “Does having strong critical thinking skills make a person ethical?”

## CRITICAL THINKING AND ETHICAL BEHAVIOR

We have been using the expression “strong critical thinker” instead of “good critical thinker” because of the ambiguity of the word *good*. We want to praise the person's critical thinking without necessarily making a judgment about the person's ethics. For example, a person can be adept at developing cogent arguments and adroit at finding the flaws in other people's reasoning, but that same person can use these skills unethically to mislead and exploit a gullible person, perpetrate a fraud, or deliberately confuse, confound, and frustrate a project.

A person can be *strong* at critical thinking, meaning that the person can have the appropriate dispositions, and be adept using his or her critical thinking skill, but still not be an ethical critical thinker. Take for example the remarkably deceitful Congressman Francis Underwood played by Kevin Spacey and his equally manipulative wife Claire Underwood played by Robin Wright from the Netflix series *House of Cards*. Or, consider the Machiavellian pope, Alexander VI, AKA Rodrigo Borgia, played by Jeremy Irons from the Showtime series *The Borgias*. These film characters use strong critical thinking to exploit, mislead, manipulate, and coerce whomever it takes to achieve their interests. Compelling examples however are not limited to the big screen. There have been people with superior thinking skills who, unfortunately, have used their talents for ruthless, horrific, and unethical purposes. It would be great if critical thinking and ethical virtue were one and the same. But they are not.

At times people make a public confession of the shameless efforts to figure out how to deceive others. Consider, for example, the revelations that Victor Crawford, a tobacco lobbyist, made in his *60 Minutes* interview with Leslie Stahl. For excerpts search the Internet for “Victor Crawford Leslie Stahl.” Crawford admits that he deliberately misled and manipulated legislators and the general public to advance the interests of the tobacco industry. He says, “Was I lying? Yes,





yes. . . Yes, yes. . . Of course. My job was to win. . . Even if you're going out lying about a product that's going to hurt kids."<sup>7</sup> Ms. Stahl calls him out, saying that he was unethical and despicable to act that way. For years Crawford used his critical thinking skills to confuse and deceive consumers so that his corporate masters could sell a product known to be addictive and deadly. Now, all these years later, he regrets having done that. The interview is part of his effort to make amends for his lies and the harm they may have caused to others.

Critical thinking is very useful in ethical decision making, but like any tool or process, it can be applied to unworthy and shameful purposes as well.

**They spend billions of dollars every year lobbying . . . lobbying, to get what they want . . . Well, we know what they want. They want more for themselves and less for everybody else, but I'll tell you what they don't want . . . they don't want a population of citizens capable of critical thinking. They don't want well informed, well educated people capable of critical thinking. They're not interested in that . . . that doesn't help them. That's against their interests.**

**George Carlin, Comedian<sup>8</sup>**

## **SPECIFIC SUGGESTIONS FOR CULTIVATING A POSITIVE CRITICAL THINKING MINDSET**

The basic insight is this: Positive critical thinking habits of mind can be nurtured by internalizing the values that they embody and by reaffirming the intention each day to live by those values.<sup>9</sup> Here are four specific suggestions about how to go about this.

- 1 Value Critical Thinking.** If we value critical thinking, we desire to be ever more truth-seeking, open-minded, mindful of consequences, systematic, inquisitive, confident in our critical thinking, and mature in our judgment. We will expect to manifest that desire in what we do and in what we say. We will seek to improve our critical thinking skills.
- 2 Take Stock.** It is always good to know where we are in our journey. The "Critical Thinking Disposition Self-Rating Form," presented earlier, will give us a rough idea. If we have general positive critical thinking habits of mind, that should show up in the score we give ourselves using this self-rating form.
- 3 Be Alert for Opportunities.** Each day we should be alert for opportunities to make decisions and solve problems reflectively. Rather than just reacting, take some time each day to be as reflective and thoughtful as possible in addressing at least one of the many problems or decisions of the day.
- 4 Forgive and Persist.** Forgive yourself if you happen to backslide. Pick yourself up and get right back on the path. These are *ideals* we are striving to achieve. We each need discipline, determination, and persistence. There will be missteps along the way, but do not let them deter you. Working with a friend, mentor, or role model might make it easier to be successful, but it is really about what you want for your own thinking process.



Finally, here some specific recommendations about ways to translate each of the seven positive attributes measured by the [CCTDI](#) into action. These recommendations should be practiced daily. In providing these permit me to repeat that the cultivation of a positive critical thinking mindset is both easier and yet more difficult than one might at first believe.



## Putting the Positive Critical Thinking Mindset into Practice

**Truth-seeking** – Ask courageous and probing questions. Think deeply about the reasons and evidence for and against a given decision you must make. Pick one or two of your own most cherished beliefs, and ask yourself what reasons and what evidence there are for and against those beliefs.

**Open-mindedness** – Listen patiently to someone who is offering opinions with which you do not agree. As you listen, show respect and tolerance toward the person offering the ideas. Show that you understand (not the same as “agree with”) the opinions being presented.

**Analyticity** – Identify an opportunity to consciously pause to ask yourself about all the foreseeable and likely consequences of a decision you are making. Ask yourself what that choice, whether it is large or small, will mean for your future life and behavior.

**Systematicity** – Focus on getting more organized. Make lists of your most urgent work, family and educational responsibilities, and your assignments. Make lists of the most important priorities and obligations as well. Compare the urgent with the important. Budget your time to take a systematic and methodical approach to fulfilling obligations.

**Critical Thinking Confidence** – Commit to resolve a challenging problem by reasoning it through. Embrace a question, problem, or issue that calls for a reasoned decision, and begin working on it yourself or in collaboration with others.

**Inquisitiveness** – Learn something new. Go out and seek information about any topic of interest, but not one that you must learn about for work, and let the world surprise you with its variety and complexity.

**Judiciousness** – Revisit a decision you made recently and consider whether it is still the right decision. See if any relevant new information has come to light. Ask if the results that had been anticipated are being realized. If warranted, revise the decision to better suit your new understanding of the state of affairs.

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<sup>2</sup> The instrument is published exclusively by [Insight Assessment](#), San Jose, CA. Contact the publisher about use licenses.

<sup>3</sup> Peter A. Facione, Noreen C. Facione, and Carol A. Giancarlo, “The Disposition Toward Critical Thinking: Its Character, Measurement, and Relationship to Critical Thinking Skill,” *Informal Logic* 20(1)(2000): 61–84; Peter A. Facione, Noreen C. Facione, and Carol A. Giancarlo, “The Motivation to Think in Working and Learning,” *Preparing Competent College Graduates: Setting New and Higher Expectations for Student Learning*, Ed. Elizabeth A. Jones (San Francisco: Jossey-Bass Publishers, 1997) 67–79; Peter A. Facione, Carol A. Giancarlo, and Noreen C. Facione, “Are College Students Disposed to Think?” (ERIC Doc. No. ED 368 311) Apr. 1994; Peter A. Facione, Noreen C. Facione, “Profiling Critical Thinking Dispositions,” *Assessment Update* (5)2





(1993): 1–4; Carol A. Giancarlo and Peter A. Facione, “A Look across Four Years at the Disposition toward Critical Thinking among Undergraduate Students,” *The Journal of General Education* 50(1) (2001): 29–55.

<sup>4</sup> H. C. Triandis, “Values, Attitudes and Interpersonal Behavior,” *Beliefs, Attitudes, and Values. Nebraska Symposium on Motivation*, Ed. Herbert E. Howe (Lincoln, NE: University of Nebraska Press, 1980); Icek Ajzen and Martin Fishbein, “A Theory of Reasoned Action: Some Applications and Implications,” *Beliefs, Attitudes, and Values. Nebraska Symposium on Motivation*, Ed. Herbert E. Howe (Lincoln, NE: University of Nebraska Press, 1980).

<sup>5</sup> Peter A. Facione, Carol A. Giancarlo, Noreen C. Facione, and Joanne Gainen, “The Disposition Toward Critical Thinking,” *Journal of General Education* 44(1) (1995): 1–25; Peter A. Facione, Noreen C. Facione, and Carol A. Giancarlo, *User Manual: The California Critical Thinking Disposition Inventory* (San Jose, CA: California Academic Press, 1992, 1994, 2001, 2007, 2014); Noreen C. Facione and Peter A. Facione, “Externalizing the Critical Thinking in Knowledge Development and Clinical Judgment,” *Nursing Outlook* 44 (1996): 129–136; Peter A. Facione, “Empirical Methods of Theory and Tool Development for the Assessment of College Level Critical Thinking and Problem-Solving,” *Report, Conference on Collegiate Skills Assessment*, Washington, DC: NCEs, U.S. Department of Education, 1992; Elizabeth A. Jones, Steven Hoffman, L. Moore, G. Ratcliff, S. Tibbetts, and B. Click, *Essential Skills in Writing, Speech and Listening, and Critical Thinking for College Graduates: Perspectives of Faculty, Employers, and Policy Makers, Project summary*, U.S. Department of Education, OERI Contract No. R117G10037, University Park, PA: National Center for Postsecondary Teaching, Learning, and Assessment, Pennsylvania State University, 1994; Elizabeth Jones, Steven Hoffman, L. Moore, G. Ratcliff, S. Tibbetts, and B. Click, *National Assessment of College Student Learning: Identifying the College Graduates’ Essential Skills in Writing, Speech and Listening, and Critical Thinking*, Washington, DC: National Center for Educational Statistics, U.S. Department of Education, Office of Educational Research and Improvement, OERI publication NCES 93-001, 2005.

<sup>6</sup> John Dewey, *How We Think*. (Boston: D.C. Heath & Co., 1910).

<sup>7</sup> Transcript of March 9, 1995 CBS *60 Minutes* Crawford Stahl interview. Feb. 9, 2014 <http://archive.tobacco.org/Documents/950319crawford.html>

<sup>8</sup> Ten top George Carlin quotes. #2 “American Dream.” Feb. 9, 2014. [http://www.alternativereel.com/soc/display\\_article.php?id=0000000019](http://www.alternativereel.com/soc/display_article.php?id=0000000019)

<sup>9</sup> Stephen D. Brookfield, *Developing Critical Thinkers: Challenging Adults to Explore Alternative Ways of Thinking and Acting* (San Francisco: Jossey-Bass Publishers, 1987); Lauren Resnick, *Education and Learning to Think* (Washington, DC: National Academy Press, 1987); Chet Meyers, *Teaching Students to Think Critically* (San Francisco: Jossey-Bass Publishers, 1986).