

DISTRIBUTION A:

Approved for public release; distribution is unlimited.

Document created: 17 June 04

Air & Space Power Chronicles - [Chronicles Online Journal](#)

Critical Thinking For The Military Professional

Col W. Michael Guillot

*“Any complex activity, if it is to be carried on with any degree of virtuosity, calls for appropriate gifts of intellect and temperament
...Genius consists in a harmonious combination of elements, in which one or the other ability may predominate, but none may be in conflict with the rest.”¹*

In a previous article on Strategic leadership I described the strategic environment as volatile, uncertain, complex, and ambiguous (VUCA). Additionally, that writing introduced the concept of strategic competency.² This article will discuss the most important essential skill for Strategic Leaders: critical thinking. It is hard to imagine a Strategic leader today who does not think critically or at least uses the concept in making decisions. Critical thinking helps the strategic leader master the challenges of the strategic environment. It helps one understand how to bring stability to a volatile world. Critical thinking leads to more certainty and confidence in an uncertain future. This skill helps simplify complex scenarios and brings clarity to the ambiguous lens. Critical thinking is the kind of mental attitude required for success in the strategic environment. In essence, critical thinking is about learning how to think and how to judge and improve the quality of thinking—yours and others.

Lest you feel you are already a great critical thinker, consider this, in a recent study supported by the Kellogg Foundation, only four percent of the U.S. organizational population was considered highly competent in strategic thinking.³ When it comes to thinking itself, there are still a number of myths to contend with for instance:

-Thinking is natural and you don't have to think about it to do it well - you do!

-Thinking skills and intelligence are synonymous – they aren't!

-Bright people should just know how to think well together – they don't!⁴

The grand master of military strategy and leadership, Carl Von Clausewitz, thoroughly embraced the value of critical thinking in his writings concerning military genius. Clausewitz advised, “What we must do is to survey all those gifts of mind and temperament that in combination bear on military activity,”⁵ Also consider the challenge presented to all the military departments by

Secretary of Defense Rumsfeld when he called for leaders who were proactive, more like venture capitalists, and deal with uncertainty—those unknown, unknowns.⁶ Critical thinking is required to address this kind of challenge.

To understand the concept of critical thinking, first one must try to define it—what it is and what it is not. Next, the prospective critical thinker must study the topic to develop critical thinking skills. This paper will present a very useful construct or model for learning how to think critically and how to use critical thinking. Finally, we will consider the challenge of engaging non-critical thinking societies.

*Average intelligence may recognize the truth occasionally, and exceptional courage may now and then retrieve a blunder; but usually intellectual inadequacy will be shown up by indifferent achievement.*⁷

WHAT IS CRITICAL THINKING?

There is only one thing harder than learning to think critically—trying to define the concept in a comprehensive way. To arrive at a comprehensive definition, one must consider the origins of critical thinking, some misconceptions about critical thinking, and some of the attributes of critical thinking.

We can trace the origins of critical thinking back to the early Greek philosophers. The word itself comes from two Greek words: *Kriticos*, meaning discerning judgment, and *kriterion*, meaning standard.⁸ Among the philosophers most closely associated with critical thinking was Socrates who strived to find meaning and truth through serious questioning. In his day, Socrates embodied the ideas of *kriticos* and *kriterion*, two ideas we will consider later when we address a modern construct for critical thinking. He developed the art of Socratic questioning to reach a more profound logic, understanding, and reflective thought.⁹ In essence Socrates' method was the quest for reason and wisdom. Many years after Socrates, Clausewitz too tried to define critical thinking. As mentioned earlier, Clausewitz called his brand of critical thinking "Genius." In his definition, Clausewitz stated, "Genius consists in a harmonious combination of elements, in which one or the other ability may predominate, but none may be in conflict with the rest."¹⁰ He further defines critical thinking as "strength of mind" and as "...the ability to keep one's head at times of exceptional stress and violent emotion."¹¹ While we have no evidence Clausewitz studied Socrates, there seems to be little doubt Clausewitz understood critical thinking and helped solidify the importance of critical thinking to strategic leaders.

Even with the clear writings of Socrates and Clausewitz, there are still mis-conceptions about what constitutes critical thinking. Many people often use the term 'critical thinking' without understanding the concept, the meaning, or how to apply it. Others progress to a stage sociologist Dr. Richard Paul, calls *activated ignorance* that is, taking into the mind and actively using information that is false though mistakenly thinking it is true.¹² Another misconception involves the term 'critical thinking' itself. Critical thinking is not being a critic or a cynic. Being a critic or cynic is not critical thinking at all, but many times this is the common practice. Some people even confuse critical thinking with having a critical spirit. This does not mean being negative or hypercritical of everything or every issue.¹³

Exploring the attributes of a critical thinker will help lead to a common definition. Critical thinking can be termed *robust thinking* because it involves many different attributes. Most importantly critical thinking is a *state of mind* whose goal is better thinking. The attribute is being repetitively cognizant of one's thought process. The term 'meta-cognition' has been used to describe this state of being—essentially 'thinking about thinking.'¹⁴ The mark of a good critical thinker then is the ability to continually monitor thought patterns for emotional, analytic, and psychological biases. Another critical thinking attribute is a questioning or inquisitive attitude. Critical thinkers always ask questions to learn more and arrive at greater depth of understanding. Critical thinkers appreciate and are not threatened by contradictory information that does not match what is already understood and accepted. Additionally they are comfortable working with ideas and thinking of things in different ways. Finally critical thinkers like to hold their thinking to high standards of objectivity. Taken together, these attributes give critical thinking its robust qualities. Although defining critical thinking is still difficult, Dr. Richard Paul, the foremost scholar of critical thinking uses the following definition:

Critical Thinking: (1) Disciplined, self-directed thinking that exemplifies the perfections of thinking appropriate to a specific mode or domain of thinking; (2) thinking that displays mastery of intellectual skills and abilities; (3) the art of thinking about one's thinking while thinking, to make one's thinking better: more clear, more accurate, or more defensible; (4) thinking that is fully aware of and continually guards against the natural human tendency to self-deceive and rationalize to selfishly get what it wants.¹⁵

A more concise definition of critical thinking is: *the ability to logically assess the quality of one's thinking and the thinking of others to consistently arrive at greater understanding and achieve wise judgments.* There are many other definitions of critical thinking and most are very similar. The key is to recognize that regardless of the definition, critical thinking abilities can be individually developed.

DEVELOPING CRITICAL THINKING

One of the most effective ways to develop this strategic leader skill is by studying the parts of critical thinking—specifically certain elements and standards. As one can imagine, there are a number of authors who write about critical thinking including Peter Facione and the late John Boyd. Each presents very compelling explanations and insights into critical thinking. However, Dr. Richard Paul developed a certain comprehensive model for learning critical thinking. The Paul model presents an integrative approach to critical thinking that allows for easier mastery of this essential strategic leader skill. In essence, the Paul model is easier to study, easier to practice and easier to teach. As a future critical thinker, you will have to commit to each of the above actions to reach the level of what Paul terms "Master Thinker."¹⁶ The Paul model can be presented as two complimentary parts: elements of reasoning and intellectual standards (see figure 1).¹⁷ Before moving to a more detailed explanation of this model, a word of caution. Sometime models tend to discourage certain individuals from learning particular subjects. If this is the case for you, consider this

THE ELEMENTS	
Purposes	Inferences
Questions	Concepts
Points of View	Implications
Information	Assumptions

Figure 1. Elements of Reasoning

model strictly as a way to learn a new style of thinking. It is not intended as a linear or sequential process. The model is simply a depiction of how critical thinkers relate thinking abilities to the real world and arrive at reasoned, wise judgments. Using both parts of the model, elements and standards, helps create the mind-matter relationship that is the basis of critical thought.

“Only those general principles and attitudes that result from clear and deep understanding can provide a comprehensive guide to action.”¹⁸

The Elements of Reasoning

In the Paul model there are eight elements of reasoning: purpose, question, information, concept, inference, assumption, point of view, and implications. While we will cover each element in this same sequence, please note the elements are arranged in a circular pattern to emphasize their non-linear, complimentary nature. We will return to this mutually supportive arrangement later in the discussion. What follows is an explanation of each element and the standards.

Purpose: Critical thinkers want to assess the purpose of their thinking and their actions. For instance, a critical thinker might ask, is my purpose in line with my goals, values, desires, and needs? Many times the non-critical thinker will delude or deceive him or herself about the true purpose of a thought or action. For instance, one may say they want the tough job at the Pentagon because it is exciting and challenging. However, the true purpose may be accepting a position with greater long-term promotion potential. The critical thinker looks deeper for the essential motive or purpose in each situation attempting to eliminate false purposes. Many examples of false purpose can be found in the media. For example, article titles often obscure the true purpose or intent of the text. Of course deliberate false purposes can also have an effect during war, especially when used as part of an information operations campaign. In the months heading up to Operation Iraqi Freedom, many of the stories concerning the U.S. Army’s 4th Division had a much greater purpose than showing morale. As General Tommy Franks indicated, one entire front of the war was devoted to deception—in essence deliberate false purposes.¹⁹ The key to understanding purpose is—being aware of ones self-deception tendency and cognizant of planned deception operations.

Question: Without a doubt, questioning is the most important element of critical thinking. One can look at critical questioning in three ways: the need to continually use critical questions, the

interrelationships of critical questions, and the need to ask and answer critical questions at the right time.²⁰ The critical thinker must seek to identify the primary issue, problem, or question at stake. In essence this is defining the problem. Although this sounds easy enough, things become difficult as scenario's change and events occur which change the central issue. The astute critical thinker will continually evaluate whether they are trying to answer the right question or solve the right problem. Paul categorizes questions into three types: questions of fact, questions of preference, and questions of judgment.²¹ For strategic leaders, questions of judgment become the difficult challenges requiring the best in critical thinking. Whereas questions of fact have one right answer and questions of preference have many answers, questions of judgment require reasoning skills. Using probing questions leads to the deeper understanding required by the complex national security environment. Some examples of questions of judgment with respect to our current conflict might include: what is the best way to fight terrorism, or how can we protect American civil liberties and maintain security? Another timely question of judgment concerns Iraq—how can the U.S. convince Iraqi clerics to support our goals?

Information: In our society there is generally no shortage of information, and most often this becomes a problem. Former Harvard professor Francis Aguilar estimates that seventy percent of the information strategists' use comes from outside their organization and fifty percent is from informal channels.²² The critical thinker must determine what information is most important and judge the quality of information. One must consider the biases and filters between incoming information and mental comprehension. Additionally, a critical thinker must see how all the information fits together and what linkages exist between the information and the entire organization. This is a systems thinking approach.²³ Again Paul writes about three ways the mind takes in information: inert information, activated ignorance, and activated knowledge.²⁴ Inert information is useless—nothing more than clutter in the mind. Activated ignorance is dangerous—using false information as truth. Activated knowledge is powerful—truthful information that leads to greater understanding and wise decision-making. Critical thinkers are generally skeptical of information and as such rely very heavily on the intellectual standards to help evaluate data to create information that leads to knowledge. We will discuss the relationship to standards later but one final point on information deserves attention—a dearth of information. Strategic leaders during wartime conditions often feel as though there is not enough actionable information and this can lead to strategic indecision. Author Gary Klein calls this paralysis “doubt that threatens to block action.” He further states that decision makers often believe a decision can be improved by collecting more information. But, in many instances this delay results in lost opportunities.²⁵ Military strategist John Boyd considered “rapidity” one of his four parts of strategic thinking. Boyd believed effective organizations avoided getting bogged down in information. They make decisions with the information available at the time.²⁶ In cases like this, critical thinking is even more important to ensure reasoned, sound judgments.

Concepts: The most powerful element of critical thinking is concepts. A concept is an idea or object that makes some other idea or thing comprehensible.²⁷ It would be impossible to understand the world without using and understanding concepts. Consider this simple example: the concept of time makes the idea of a watch or calendar possible. We have all read about people who were great conceptual thinkers, people like George Kinnen and Albert Einstein. These men had the ability to think in different dimensions—using known ideas in a different way. One might say conceptual thinking is the seed of “outside the box” thinking. Boyd

described this kind of thinking in his concept of “variety.”²⁸ Conceptual thinkers are able to change focus and shift their thinking to see things differently. They remain open to new information and new ideas. These new ideas spring from using multiple concepts.

The problem with non-critical thinkers is, they are unable to change their concepts. Uncritical thinkers get stuck using the same concepts or use incorrect concepts to interpret the world. They enter a conceptual trap! If one is trapped in a single set of concepts, one can think of things in only one way. Many times the trap is constructed by a person’s education, upbringing, and belief system. Of course the result at the strategic level can be strategic surprise or strategic disaster. The United States witnessed an example of this conceptual thinking on September 11, 2001. On that day the concept of ‘a missile’ or ‘bomb’ changed and so did our idea of how to protect against such a conceptual shift. Beforehand we were stuck in the conceptual trap that hijacked aircraft are used as hostages for ransom rather than weapons. The attack also demonstrated the power of conceptual traps. CIA Director George Tenet said, none of the warnings indicated terrorists would fly aircraft into buildings—this concept was anathema to our thinking.²⁹ Even though intelligence activities over a several year period suggested terrorists were interested in pilot training, commercial aircraft, and attacks, these small pieces of information individually could not change our conceptual thinking. Conceptual traps require overwhelming, explicit information to dismantle or strong critical thinking skills to overcome.

The master critical thinker forces the mind to think of different ways of employing or integrating the same things or ideas. Strong critical thinkers are strong conceptual thinkers who exhibit the mental agility required to rapidly and comfortably change domains of thinking to critically evaluate and analyze their world.

Inference: An inference is the conscious thought process that draws a conclusion based on the interpretation of assumptions. As the elements go, inferences can be good or bad, true or false, logical or illogical. The key to understanding inferences (conclusions) is evaluating the underlying assumptions and applying good judgment in arriving at the correct conclusion. In the aftermath of the terrorist attacks of 2004 in Spain, many leaders drew conclusions (inferences), which were false. In this case the incorrect inference was the separatist group ETA was responsible for the carnage. Hence we have the saying “jumping to conclusions” and critical thinkers resist this urge. First they carefully evaluate and interpret the available information then assess the validity of the underlying assumptions. This kind of deliberate analysis and evaluation leads to a more reasoned, informed, conclusion.

Assumption: Just as it would be impossible to understand the world without concepts, it would be paralyzing to live without assumptions. An assumption can be either an explicit conscious statement of belief or more likely a subconscious belief taken for granted. Authors Neil Brown and Stuart Keeley divide assumptions into two categories: value based and descriptive.³⁰ Value based assumptions are based on how one believes the world should be—the concept of ‘ought.’ Descriptive assumptions are more explicit and describe the world as it actually is. Many times this contrast in assumptions creates conflict for the critical thinker—a conflict that will be addressed more thoroughly later. We have all used conscious assumptions to help drive planning when there is a dearth of factual information. This is a perfectly logical and reasonable approach to thinking. However, the assumptions we make with our subconscious mind are not always

thought out or evaluated for validity. Using the Spanish example from before, the underlying assumption was, all terrorism in Spain is caused by ETA. One can easily see how faulty, subconscious assumptions lead to inaccurate conclusions. Another example of this was the 1995 bombing of the Murrah building in Oklahoma City. Again we see the same impact of faulty assumptions—that terrorism in America is caused by Arabs or Muslims. A similar faulty assumption initially occurred with several anthrax scares in the Washington D.C. area in October 2001. Critical thinkers become keenly aware of their assumptions. Not that we question all the simple assumptions that help us make it through the day, but those assumptions tied to inferences (conclusions) with large implications need careful thought. The master critical thinker attempts to bring the subconscious thoughts and assumptions into a conscious level of understanding so these assumptions can be questioned, analyzed, evaluated, and either validated, rejected, or updated.

“...fresh opinions never cease to batter at one’s convictions.”³¹

Point of View: Being able to see things from another point of view is an essential part of critical thinking closely related to conceptual thinking. The master critical thinker looks at situations from multiple points of view and different domains of thinking. For instance, critical thinkers may look at terrorism from a security domain, from a political domain, a legal domain, or a combination of the three. The ability to enter other points of view or consider a situation from another domain can be very insightful. Critical thinkers first recognize their own point of view then acknowledge other points of view and note the contrast. Strategist Boyd would consider this kind of thinking as “*variety*” and “*harmony*” in that effective organizations invite rather than fear different points of view.³² Critical thinking organizations operate without letting their point of view distort or exclusively dominate the thought processes. Consultant Peter Linkow calls this kind of strategic thinking “*valuing*.”³³ Linkow suggests expert valuers conduct a stakeholder analysis to become sensitive to the interests of others. In essence, this approach requires the critical thinker to deliberately enter another point of view. It will not be easy to initially enter another point of view—it takes extreme mental flexibility and intellectual discipline to eliminate one’s biases against doing so. Critical thinkers do not see opposing points of view as a threat, but rather another belief to be understood and perhaps even adopted. It is worth mentioning that accepting different points of view does not necessarily lead to capricious decision-making. On the contrary, Clausewitz argues just the opposite. He reminds us that new opinions will constantly batter one’s convictions and character.³⁴ But, the critical thinker will not become obstinate as a result. One becomes obstinate, Clausewitz reminds us, “...as soon as...[he]...resists another point of view not from superior insight or attachment to some higher principle, but because he objects instinctively.”³⁵ Exploring different points of view will help a critical thinker, especially in strategic leadership situations, understand the environment and clarify ambiguity.

Implications: Implications are what we expect to happen before a decision. Consequences are what actually happen after the decision.³⁶ Critical thinkers always consider the implications of their beliefs, opinions, and actions. In fact according to Paul, master thinkers should think about implications in three ways: possible, probable, and inevitable. When thinking about implications, first consider all the reasonable possibilities. In essence this includes everything from the best

case to the worse case. At this point one has developed the total expected implication set. It follows that if this set is comprehensive, it will include the consequences of an action. Next the critical thinker should consider which implications are most probable in a scenario. Finally, identify any implications that are inevitable given the situation. This kind of futures analysis is more than simple guessing. It forces ones thinking to focus on ends. From here the critical thinker can easily compare *possible implications* and *probable implications* with *expectations* of what will solve the problem or address the issue at hand. The critical thinkers expectations become the fourth part of implications: what is a “required” implication given the current problem or scenario.

Relationship of the Elements

By now you may have the opinion the Paul model of critical thinking is a rather linear way of thinking. However, the elements are more complicated than a linear model. For instance, each element of reasoning is linked simultaneously with the other elements. Consider these examples. As new information becomes available to the decision maker, assumptions and inferences may change. Changes in information will generate new questions, impact point of view, or require new concepts. If we change our assumptions, inferences-conclusions will be affected. Questioning permeates the entire model in that one must use questions to illuminate each of the other elements. For instance, the critical thinker must ask: what is my real purpose, what is the key issue, what is the most relevant information, what are the correct concepts in this case, are my assumptions valid, have I drawn the correct inferences, what points of view matter, and what are my desired implications? While this kind of circular thinking is being conducted, one must ultimately come back to both purpose and implications. The interrelationships between the elements of critical thinking meld into a dynamic system of thought—not a sequential, linear checklist approach. This kind of thinking requires a certain flexibility of the mind and is what this author terms “robust thinking.” Just as in robust decision-making, robust thinking constantly updates ones thought process by scanning for new information, checking for personal biases, maintaining conceptual flexibility, and sustaining open mindedness.

Intellectual Standards

The elements of reasoning form a framework for critical thinking. Intellectual standards act as a set of principles that help gauge or measure the quality of one’s thinking. Paul lists nine intellectual standards critical thinkers use to help raise the quality of thought. These standards include: clarity, accuracy, precision, relevance, breadth, depth, logic, significance, and fairness.³⁷ Critical thinkers apply the standards to each of the elements of reasoning to create a more reasoned, valid pattern of thinking. As one might expect, some standards are more applicable to certain elements than others with one exception. Paul maintains that clarity is a gateway standard.³⁸ Each of the elements must be clearly understood for critical thinking to occur. Essentially this is the “meeting of the minds” before serious thinking begins. Clarity does not provide comprehension but it makes comprehension possible. The critical thinker must ensure each element is clearly understood before further thought can proceed with the expectation of reasonable progress or useable results. Once an element is clearly understood, one can apply the remaining standards to achieve a robust level of thinking. The best way to apply these standards to a particular element is by asking a question related to the standard.³⁹ For instance, the critical

thinker may ask of a particular element, is this accurate? Truthful? How can one verify this? Using the precision standard helps critical thinkers refine information. One question could be, is this precise enough for decision-making? Could this information be more exact? Relevance helps distill the complexity of critical thinking by helping focus one's thinking on the parts of a scenario that relate to the question or decision at hand. As mentioned earlier, normally decision makers are overwhelmed by information, assumptions, points of view, and implications. Being able to ask "How is this relevant" is a step toward simplifying decision-making. The breadth and depth standard are the two most closely related. Taken together they are complimentary—either something is too narrow or too shallow. The key is to recognize a certain robust harmony between these two standards; for instance, critical thinkers are looking for breadth in point of view, concepts, and implications. At the same time, one needs depth in information, concepts, assumptions, and questions. In essence these standards lead to the question, do I have a wide enough view (scan) with sufficient detail on the second and third order effects? When considering logic as a standard, the simple test is: does this make sense? Another question may apply: does this opinion track with the available proof? Here the inquisitive, skeptical mind is an asset to critical thought. Logic requires one to reflect and reconsider any conditional statement or information. The significance standard, like relevance, seeks to highlight not only what applies to the situation but also what is most important. Significance will help the critical thinker prioritize information, point of view, concepts, and implications. In a sense, significance could be thought of as the first step toward planning effects based operations. Finally, critical thinkers need to consider the issue of fairness. This standard appears the most controversial of the group. Many of you are thinking, who determines what is fair and how does one determine what fair is? Both good questions without a short answer when explaining the standard of fairness. In fact when asking a panel of experts studying critical thinking to evaluate the issue of critical thinking and ethics, the majority concluded that critical thinking is totally unrelated to political correctness, morality, or values.⁴⁰ In practice we see this when very skilled professionals use critical thinking to mislead or exploit others. The issue with this kind of "weak" critical thinking is how easily personal biases, and ego creep into the thought processes. Suffice it to say, fairness has as much to do with personal bias and personal motives as ethical decision-making. The thought behind fairness as a standard relates to an individual's propensity for self-deception. So, when gauging the fairness of a decision, the critical thinker must ask, do my selfish interests distort this thinking, or is my decision fair to all concerned? The fairness standard seeks to prevent egocentric thinking. As one's ego enters the thought process, critical thinking becomes poisoned with ulterior motives resulting in sub-optimized decisions. The ego determines the purpose, and the central question, selectively chooses information, using only familiar concepts and unquestioned assumptions leading to misdirected conclusions while considering limited points of view resulting in unwarranted implications. If clarity is the gateway standard, fairness is the "gut check" standard for eliminating egocentric bias.

"Come Let Us Reason Together." (Isaiah 19:1)

Critical Thinking: You versus the Situation

Now that we have covered the basics of critical thinking this section will concentrate on putting this knowledge into perspective by offering a way to use critical thinking. Imagine being able to use critical thinking skills in two dimensions: the inner and the outer. In keeping with our

abbreviated definition of critical thinking, remember that critical thinking is useful for monitoring the quality of your thinking, the inner dimension, and the quality of other's thinking, the outer dimension. Using the following compendium of questions, one can learn how to use both dimensions.

When considering critical thinking to guide the inner dimension of your own thinking ask yourself some of the following questions: What have I said is the purpose of my thinking? What questions do I have about this situation? What do I believe to be the key question or issue needing my decision? What information do I know to be true? What kinds of information do I have too much of? Too little of? What concepts am I using right now? What conclusions have I already drawn? What assumptions underlie these conclusions? Do I need to make any assumptions in this situation? What is my point of view? What other points of view are represented? What implications would I expect see as a result of my critical thinking? What is my desired end state? Does all this seem fair and selfless? Have I checked my reasoning against some intellectual standard.

Now consider the critical thinking required to guide the outer dimension of your thinking. Seek answers to the following questions: What is my true purpose in this situation? Why am I really thinking about this? What questions should I be asking? What questions are required that I have not asked? What questions are forbidden to ask? What information do I really need to know? What information is missing that I would like to know? What other concepts could apply to this situation? What concepts should I be using that would change my thinking? What other conclusions could be drawn from the information available? Are others assumptions available for consideration? What assumptions would radically change my conclusions? Whose point of view is missing from the scenario? From what point of view am I approaching this situation? Are there other domains or points of view that I could or should accept? What are the possible implications from this robust thinking? Which implications are most probable? What implications are inevitable based on this thinking? How do these implications meet or exceed my desired end state? How would I gauge the thinking of others in this thought partnership? Have I applied the standards of thought to this reasoning?

One can see through this short exercise in questioning, how learning critical thinking skills is possible. The key as with any new skill begins with study. This article should be the first issue in your study of critical thinking. There are many more available as mentioned in the notes. Future critical thinkers must also practice the new skill so critical thinking becomes second nature as your default thinking pattern. The more you practice thinking using the elements and standards, the quicker your thinking will improve. Initially this practice will be difficult especially as one challenges the mind to think in new ways, remain flexible, open to change, and confront one's ego. Over time, critical thinking will so dominate the thought process you will begin to recognize uncritical thinking in others. At this point, the practicing critical thinker must attempt to challenge the thinking of others by explaining the concepts of critical thinking in a practical way. Being able to coherently explain, illustrate, or elaborate why certain reasoning is faulty is synonymous with teaching critical thinking. The master critical thinker teaches by demonstrating critical thinking in action.

Engaging Non-Critical Thinkers

Even though much has been written about critical thinking, many questions require further study especially on how to engage non-critical thinking societies. Specifically this challenge includes relating to non-critical thinking societies, reasoning with non-critical thinking societies, and changing non-critical thinking societies.

To understand non-critical thinking societies, one must appreciate the value of a liberal education. Here the term does not have a negative connotation but rather means being liberated from the control of others thinking. In his book *Critical Thinking*, Richard Paul captures the essence of this phrase by including small out takes titled “Think for Yourself.” What an appropriate way to describe a liberal education. In those societies controlled by warlords, despots, and dictators, a liberal education is not universally allowed or even available to the general population. As a result, the population easily becomes harnessed to weak thinking, unquestioning obedience, and radicalism. This kind of thinking manifests itself through suicide bombers, fidayeen attacks, child soldiers, and fanatical clerics.

Another challenge of relating to non-critical thinking societies is, without the ability to think for themselves, these “think-less” societies become sensitized to basic human decency. Peter Facione in his article “Critical Thinking,” describes the process as, refining humane sensibilities that lead to a critical appraisal of what is good and bad in human nature.⁴¹ The lack of humane sensibilities leads to acts of barbarism like those in Rwanda and recently the gruesome killing of contractors in Iraq.⁴² Additionally, non-critical thinking societies reject different points of view to the extent they become as Clausewitz mentioned, obstinate. Examples of this include the Islamic idea of apostasy where one who has known the faith and subsequently rejects it is marked for death.⁴³ Another issue as Facione points out is how easily non-critical thinking societies are exploited both politically and economically.⁴⁴ The impact of not understanding the international economic system, legal system, or social system is that these societies lag further behind the rest of the world, live meager lives, without hope leading to even less critical thinking. Bernard Lewis, author of *The Crisis of Islam*, relates this downward spiral to the concept of frustration felt by many revolutionary Islamists.⁴⁵ Facione believes that in time the judicial and economic systems of such a society will collapse.⁴⁶

As you can see, there are many challenges in trying to relate to non-critical thinking societies. But, since interaction between different societies is inevitable, how does a critical thinking society reason with a non-critical thinking society?

The question of reasoning with non-critical thinking societies boils down to two issues: what the society respects and patience in reasoning. Both these issues bear on the idea of establishing democracy in non-critical thinking societies. In many non-critical thinking societies, the only thing they respect is power—not culture. Non-critical thinking societies understand violence, not reason. Again we can turn to Clausewitz to shed light on this point when he posited, “in any primitive warlike race, the warrior spirit is far more common than among civilized people.”⁴⁷ Perhaps the non-critical thinking societies produce more violence prone cultures but according to Clausewitz, they rarely if ever produce a great commander or military genius because this requires the ability to think critically. At best critical thinking will have limited short-term

success dealing with non-critical thinking societies. Without changes, ultimately reasoning with these societies will fail. As Bernard Lewis points out, some of these societies will seek short-term accommodation before turning to violent approaches.⁴⁸ Author Roger Scruton writes in his book *The West and the Rest* that the view from many of these societies questions the entire western tradition of reasoning. They equate reasoning as a means to reinforce western values and as a result to accept one is to accept the other.⁴⁹ One might ask, without the ability to reason with non-critical thinking societies is it possible to create democracy? Facione posits "...in such a society, one that does not liberate its citizens by teaching them to think critically for themselves, it would be madness to advocate democratic forms of government."⁵⁰ Democracy is hard even under the best of circumstances and while there may be set backs, one can begin the process in non-critical thinking societies but this kind of embryonic democracy will require extreme protection, advice, and perhaps a rescue mission or two. Since the quality of any democracy is equal to the quality of the democrats, in a non-critical thinking society, the quality of the democracy may be low for quite a while but a change to "thinking freedom" is essential to nurturing the beginnings of critical thinking.

How can a critical thinking society help bring about the changes required in non-critical thinking societies? As discussed earlier, critical thinking can be taught with varying degrees of success within any society. So, one approach should infiltrate the education systems of the subject society. This could be accomplished by direct intervention, with critical thinking teachers, or training for current teachers. Another effective idea is to immediately increase access to books and materials on critical thinking and reasoning skills. In many cases these kinds of works would be the first such editions translated into some languages. Next, telecommunications can be a tremendous "brain multiplier" if used to provide truthful, unbiased information to the targeted society. What would happen if a certain young democratic nation suddenly inherited one million satellite dishes each with pre-programmed information channels? Certainly the conceptual thinking required here is not to think about non-critical thinking societies as rejecting western reasoning but rather think of them as an educational challenge. Although the deep creativity necessary to solve this monumental problem is the subject for a subsequent article, the above ideas are readily apparent.

Epilogue

This article intended to explain the concept of critical thinking by first trying to define it and then reviewing what is considered one of the better models of critical thinking. One may argue whether one model is better than the next, but in this case, the elements of reasoning and intellectual standards presented represent the essence of how to think critically. Taken in their entirety, a short collection of questions can lead one to the kind of robust thinking required in today's strategic environment. Critical thinkers today face the challenge of creating the critical thinkers of tomorrow—many in foreign lands who have never known or accepted the power of critical thinking. Robust thinkers must answer the question, how do we accelerate the process of change in a society of critical thinkers over nihilistic decision-making? We are living in the era of 'wars of the haves versus the have-nots' and now more than ever critical thinking seems to be a big part of what is missing from the societies we are trying to democratize. Becoming a critical thinker is an admirable goal requiring a committed effort to learn the concepts, practice the elements, and teach the ways. It is critical for military professionals to develop this essential

strategic leader skill. Clausewitz recognized the value of critical thinking for strategic leaders when he wrote, "...the human mind is far from uniform. If we then ask what sort of mind is likeliest to display the qualities of military genius, experience and observation will tell us that it is the inquiring rather than the creative mind, the comprehensive rather than the specialized approach, the calm rather than the excitable head to which in war we would choose to entrust the fate of our brothers and children, and the safety and honor of our country."⁵¹

NOTES

1. Carl Von Clausewitz, "*On War*," Edited by Michael Howard and Peter Paret, (Princeton NJ: Princeton University Press, 1976), p.100.
2. Col W. Michael Guillot, "*Strategic Leadership: Defining the Challenge*," Air and Space Power Journal 17, no. 4, Winter 2003, pp.67-75.
3. Peter Linkow, "*What Gifted Strategic Thinkers Do*," Training and Development, July 1999, p. 34.
4. Dan D. Elash, "*Thought Partnerships: The Muscles For High Performance Thinking*," on-line at: <http://www.syntient.com/docs/ThoughtPartnershipsBuildACompany.pdf>, p. 2.
5. Clausewitz, p.100.
6. Vanity Fair, "*The Radical at the Pentagon*," February 1, 2003, p. 128, on-line from <http://ebird.dtic.mil/Jan2003/e20030113145939.html>.
7. Clausewitz, p. 101.
8. Richard Paul and Linda Elder, "*Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*," (Upper Saddle River NJ: Prentice Hall, 2001), p.369.
9. Paul and Elder, p.375.
10. Clausewitz, p.100.
11. Clausewitz, p.105.
12. Paul and Elder, p. 144.
13. Peter Facione, "*Critical Thinking: What It is and Why it Counts*," California Academic Press, 1998, p. 7, on-line from: http://www.insightassessment.com/pdf_files/what&why98.pdf.
14. T. Owen Jacobs, "*Strategic Leadership: The Competitive Edge*," (Fort Leslie J. McNair, Washington, D.C.: Industrial College of the Armed Forces, 2000) p. 83.
15. Paul and Elder, 397.
16. Paul and Elder, p. 22.
17. Used with permission from the Foundation for Critical Thinking, Dillon Beach California. On-line contact: <http://www.criticalthinking.org/>.
18. Clausewitz, p. 108.
19. Joseph H. Galloway, "*General Tommy Franks discusses conducting the war in Iraq*," Knight-Ridder Washington Bureau, June 19, 2003, on-line at: <http://www.realcities.com/mld/krwashington/6124738.htm>.
20. M. Neil Browne and Stuart Keeley, "*Asking the Right Questions: A Guide to Critical Thinking*," (Upper Saddle River NJ: Prentice Hall, 2000) p. 2.
21. Paul and Elder, p. 116.
22. Linkow, p. 35.
23. Center for Creative Leadership, "*How do Leaders Lead Strategically?*" August 1, 2003, p. 1, on-line at: <http://www.ccl.org/CCLCommerce/news/newsletters/enewsletter/2002/>.

24. Paul and Elder, p. 143.
25. Gary Klein, *Sources of Power: How People Make Decisions*, (Cambridge MA: MIT Press, 1998), p. 276.
26. Elash, p. 3.
27. Paul and Elder, p. 55.
28. Elash, p. 3.
29. David Johnston and Eric Schmitt, "Uneven Response Seen on Terror in Summer of 2001," *New York Times*," April 4, 2004 p. 4, on-line at:
<http://www.nytimes.com/2004/04/04/politics/04summ.html>.
30. Brown and Keeley, p. 62.
31. Clausewitz, p. 108.
32. Elash, p.3.
33. Linkow, p. 36.
34. Clausewitz, p. 108.
35. *ibid*, p. 109.
36. Paul and Elder, p. 149.
37. Paul and Elder, p. 84.
38. Paul and Elder, p. 85.
39. Paul and Elder, p. 153.
40. Facione, p. 10.
41. *Ibid*, p. 12.
42. Monica Davey, "Americans are Jolted by Gruesome Reminders of the Day in Mogadishu," *New York Times*," April 1, 2004, p. 1, on-line at:
<http://www.mytimes.com/2004/04/01/national/01reax.html>.
43. Bernard Lewis, *The Crisis of Islam*, (New York: Random House, 2003), p. 41.
44. Facione, p. 13.
45. Lewis, p. 22.
46. Facione, p. 13.
47. Clausewitz, p. 100.
48. Lewis, p. 28.
49. Roger Scruton, *The West and the Rest: Globalization and the Terrorist Threat*, (Wilmington DE: ISI Books, 2002), p. 73.
50. Facione, p. 13.
51. Clausewitz, p. 112.

Disclaimer

The conclusions and opinions expressed in this document are those of the author cultivated in the freedom of expression, academic environment of Air University. They do not reflect the official position of the U.S. Government, Department of Defense, the United States Air Force or the Air University.

PBS 401 Student Reading / 7,100 words / 28 minutes

[[Air & Space Power Chronicles Home Page](#) | Feedback? [Email the Editor](#)]