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**CRITICAL THINKING IN THE MILITARY DECISION - MAKING  
PROCESS**

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***Abstract:***

Romanian Naval Forces are proud to be a rational and hierarchical organization, in which critical thinking is encouraged. More than that, it is expected that officers to respond promptly to all the command exercise challenges. Whether we are talking about making decisions in a short or long period of time, the commanding officers must possess the critical thinking skills whereby the solution found to be the most effective. Therefore, the lack of critical thinking of the commander in the decision-making process (MDMP) is an important failure factor at all levels, whether strategic, operational or tactical. This is why it is necessary to analyse the impact of critical thinking on intuitive and analytical decisions, to determine and demonstrate certain barriers that threaten critical thinking as well as to propose practical ways of using critical thinking in the decision making process. This paperwork comes to assist officers who will be in charge of certain command positions or will participate in operations planning groups and, implicitly, will have an important role in the decision-making process.

*Key words: critical thinking; the decision-making process (MDMP); intuitive decision; analytical decision; barrier to critical thinking; practical ways to use critical thinking in the decision-making process.*

**1. Introduction**

Nowadays, the profile of the war is very complex, upgraded more and more in a comprehensive way by using along with its military features both governmental and non-governmental organisations and national institutions. These ongoing changes are constantly challenging the command and the commander’s skills during decision-making process in such a distinctive operational environment for the standard military thinking.

In order to manage complex and uncertain situations, commanders often rely on critical thinking as a key option. This kind of strategy is specific only for the decision making process, leading towards increasing successful choices by decreasing thinking fallacies. Critical thinking relies on different features such as: analysis of proofs, interrogation circumstances, option opportunity, monitoring plan and setting the limits for the analytic thinking. The success of a decision making process fully depends on the optimal usage of the critical thinking skills.

This paperwork presents the decision making process characteristics, describes the critical thinking concept, hyphenates the objective-cognitive process barriers and the “how to do” techniques in using critical thinking.

**2. Decision analysis and decision making process**

At tactical and, moreover, at operational level, the commander’s decisions have a noticeable influence over the subordinated personnel. Occasionally, some of these decisions may lead to financial, material, technical or even national security related outcomes.

The term of decision defines a dynamic process due to the climate of an operational environment and the continuous changes in the staff structure. From a military perspective, the decision can be defined as the choice of an optimal one from various solutions, one that shall help accomplish one or several military tasks or, in other words, the commander means of applying his



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vision on the purpose achieving actions. The decision represents the course of action in order to achieve the main goal. Depending on its strategy and time schedule, decision making process can be immediate or urgent and deliberated.

The immediate or urgent decision making process depends on a short period of time, usually minutes or seconds. It is commonly encountered in slightly ordinary activities with repetitive situations. In these cases, the decision maker is very familiar with the situation, without need of a detailed analysis. Such specific situations totally rely on the commander’s intuition and experience.

On the other hand, the deliberated decision making process takes place in a larger period of time and involves a more detailed analysis of the related information.

A military decision is undertaken after a long documented analysis on a given situation. This type of analysis is basically all what a decision making process represents and should respect the following:

- to be carried out in accordance with stated mission;
- to be permanently connected to the operational environment;
- to apply to all national and international regulations;
- to be adaptable, usable, efficient and sustained by the staff expertise;
- to be suitable in accordance with the technical and material facilities.

Similar, the decision should correspond to certain features: realistic, operational and sustainable, adaptable, simple and concise, doable, changeable.

An efficient decision is also influenced by an immediate and concise feedback over the relevant and useful profile of an undertaken decision.

Characteristic to the commander and his staff actions, the Military Decision Making Process (MDMP) is an analytical process that influences the future planning and conducting of a mission, as well as a reliable tool of the commander during decision making, estimations and operational plan development. The MDMP is both science and art. A part of the military operations can be quantified (distances, consumption, target effectiveness) as being specific to the science of war, while the other part corresponds to the military art profile (leadership, complexity, uncertainty).

The MDMP is also helpful for better analysing and identifying the operational environment. In certain cases, when the time is not a barrier, the MDMP is used in enemy course of action (ECO) situations as a deliberated, detailed, sequential and time consuming process. Therefore the MDMP is the key for all timed-operation planning activities.

The outcome of a complete MDMP should be the basis for a future planning process, especially when time does not permit a detailed review, as long as the METT-T parameters have not suffered considerable changes.

The MDMP is compounded of seven interrelated sequential steps. In other words, the outcome of one step is used in developing the next step, as presented in figure bellow.

<b>Seven steps in the Military Decision-making Process</b>
Step 1: Receipt of Mission
Step 2: Mission Analysis
Step 3: COA Development
Step 4: COA Analysis (Wargame)
Step 5: COA Comparison
Step 6: COA Approval
Step 7: Orders Production



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Figure no. 1

### 3. Critical Thinking in the Military Decision Making Process – Definition and role

Critical thinking is defined as a mental process that involves an analysis of the truth as others present it. A process like this will always lead to predictable results, the reflected affirmations being made on a proof, rational and analytical basis.

From a logical perspective, the MDMP is characterised by a reasonable and reflective truth analysis over ideas, concepts and beliefs, aiming to use the knowledge and skills of the commander and staff as war power. Considering the saying of the General William Depuy, “the commandant’s mind is in the centre of the process”<sup>49</sup> the MDMP may be divided in two parts: analysis of the way one thinks and evaluation of the thinking process outcome, regardless of its effectiveness. These type of thinking is valuable for overcoming rational thinking limits, such as inherited or developed habits.

From the presented perspective, the critical thinking is a key tool in solving complex situations, being used during all the decision making process. While critical thinking plays an role in *how to think*, the MDMP is all about *what to think*. On a short analogy, we may conclude that critical thinking in MDMP refers to *how to think on what you should think at*.

Specialist noted that the critical thinking is determined by several elements and activities. Basically, these parameters are: observations, facts, deductions, assumptions, opinions, arguments and critical analysis. On a logical basis, these featured must be preserved and connected, as shown in Figure no. 2.

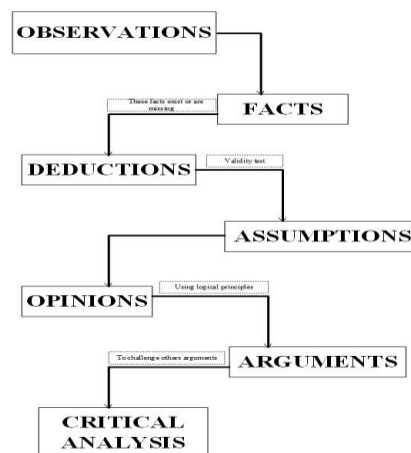


Figure no. 2. Elements of Critical Thinking

Summarizing, the observation lead to facts, the evidence or absence of facts lead to deductions, the validity of these deductions conclude to certain assumptions that will further help in setting opinions, logical rules form arguments, while debating arguments lead to critical analysis. More and more, the critical analysis is the argument for debating all sub-sequential elements (observations, facts, deductions, assumptions, opinions).

In order to maintain an effective critical thinking, a commander should permanently be aware of own and staff evolution, by fulfilling the following aspects:

- being able to distinguish valid observations from facts;

<sup>49</sup> Elliot Jaques, *Social Power and the CEO: Leadership and Trust in a Sustainable Free Enterprise System*, Greenwood Publishing Group, 2002, p. 126.



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- to be perseverant and objective and to gather valuable facts or information;
- to identify relations or connections between what has been discovered or observed during the analysis;
- to submit reliable deductions based on facts existence or absence;
- to sustain valid opinions;
- to build arguments, not as final words on an issue, but as useful debate on identifying an optimal solution.

#### **4. Psychological and logical barriers to critical thinking**

There are two main limits during a MDMP that restrict the comprehension of a given issue: psychological impediments and logical errors. As the commanders and staff are sub-products of the military system, the system itself confronts with its own limits, such as rigidity and ordinary outdated values, beliefs and mind-sets. Despite professional training or experience, the personnel thinking process is eligible of being manipulated by psychological and logical parameters. In this case, the MDMP requires an alternative analysis to reach a rational thinking skills. Milan Vego noted that “bias, impressions and assumptions also play a great role in the commander’s decision making process. The evaluation of all information is in charge of the staff...”<sup>50</sup>.

*Psychological impediments* are nothing more than the result of humans’ irrational predictability due to all beliefs and the mentality developed during life experiences. Analysing the saying of Jose Ortega y Gasset, “I am I plus my circumstances”<sup>51</sup>, we may conclude that regardless our own independence trait desire, our thinking process is irreversible influenced by the social context we belong to.

The main psychological barriers to critical thinking include, among others: loyalty, herd instinct, and groupthink; archetypes, prejudice, stereotypes, and scapegoats/ finger pointing; wishful thinking, mirror-imaging, and self deception; rationalization and denial.<sup>52</sup>

These types of barriers design a blurred image of the debated issue. It is common for the commander and its staff to rely on their own beliefs rather that on what’s obvious. For a better comprehension, let’s analyse a given example: an airplane pilot will successfully use all on-board facilities during unfavourable meteorological conditions, relying only on the equipment and not on the native instinct of safely operate the aircraft. In this case, the flight tools are nothing more than critical thinking. An airplane pilot relies on the equipment for orientation and altitude estimation, while the commander an his staff rely on critical thinking to verify and adapt their own perceptions. How a commander sees the world is based on his mind-set.<sup>53</sup>

Mind-set is the distillation of accumulated knowledge about a subject in a coherent framework through which people see the world. Mind-set is also a sum of all prejudices related to a particular subject, neither positive nor negative. This is inevitable and resilient. At the same time, mind-set is a very important factor in making quick decisions about complex situations, being mandatory for day-by-day interactions.

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<sup>50</sup> Milan N. Vego, NWC 1004 Operational Warfare, Naval War College, Newport, RI, 2000, p. 604.

<sup>51</sup> Brain quote website, [https://www.brainyquote.com/lists/authors/top\\_10\\_jose\\_ortega\\_y\\_gasset\\_quotes](https://www.brainyquote.com/lists/authors/top_10_jose_ortega_y_gasset_quotes).

<sup>52</sup> <https://apps.dtic.mil/dtic/tr/fulltext/u2/a425924.pdf>.

<sup>53</sup> Ibidem.



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On the other hand, mind-set distorts the perception of reality. The commander is not always aware of its existence or its effects, which may be more or less beneficial to future conclusions, analyses and recommendations.

As long as the commander does not carefully analyse his way of thinking regarding the problem solving and decision-making, he will not be aware of the negative effects that mind-set can bring to the MDMP. Discovering the errors caused by the mind-set requires moral courage and character. We need to understand why we think what we think, and if the starting points are wrong, we have to go back to them and re-analyse the general framework of the problem. Although MDMP can channel the entire thinking process, commanders should be interested in divergent thinking rather than its standardization.

Generally, people develop seven kinds of behaviours, although not all can appear in an organization or group. These types of behaviours can directly influence the decision-making process, whether it refers to the acquisition of military technology or the conduct of a sea-borne operation. These behaviours represent the inputs of the commander and his staff within MDMP. Some of them lead to irrational decisions, largely based on intuitive thinking. Critical thinking is the catalyst that recognizes and overcomes irrational thinking. Failure to make the optimal decision arises because irrational elements interpose between commanders and logical thinking.

The seven types of behaviours that can exist within a group are the following:

1. Regarding the decision-making process, people are subject to feelings and emotions. If emotions overwhelm rational thinking then decisions must be postponed and reanalysed.

For example, if a commander has served at some point in an anti-submarine ship structure, most likely, he will remain attached to these ships. Future decisions will be influenced by these feelings of attachment, ignoring perhaps other types and classes of ships. This can have an undesirable end, especially if the main effort, for example, is to be sustained by missile-carrying ships. On the other hand, a marine officer will develop a strong emotional rejection over the entire group if within the staff there is the perception that the Marine Corps do not have an important role in naval operations. This will also lead to making irrational decisions. Unfortunately, it can be noticed that people can not make the right decision without being slightly emotional attached to that decision.

2. The human mind is set in such a way that it chooses certain shortcuts in the thinking process. These shortcuts are unconscious, and the attempt to cancel them is useless.

For example, suppose that a Mine Warfare specialist should respond in a timely manner regarding an activity such as boarding marine mines. It may happen that after he presents his point of view, the specialist no longer remembers the reasoning behind which he made that decision. This is because of the vast experience in the field, and it is not necessary to go through the entire decision-making process. Involuntary, the mind chooses shortcuts.

3. Based on past experiences, people tend to live in accordance with previously encountered certain patterns.

For example, in 1941, during the Japanese bombing of Pearl Harbor, people could not believe that what they see is an enemy attack on the base. They felt that what was happening was nothing but a joke of the US Navy; they have taken into account every other possibility than the real fact. Here's how the human mind expects to meet a familiar pattern in everything. In case that the model/ pattern is missing then it will be crafted almost instantly so that the unheard event to be assimilated to a known one.



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4. People are instinctively based on biases<sup>54</sup> and mind-sets which makes them vulnerable to their effects. However, they could not function without them because these two provide the necessary repetitive functions in making decisions. Practically, there is no need for thinking in certain processes - they are carried out automatically. Danger occurs when acting blindly, without questioning whether the thinking process is correct or not. In solving complex and even ambiguous problems, commanders need to verify the veracity of assumptions so as to discover what remains to be analysed or changed in the situation.

5. People need to find explanations for everything, whether they prove to be valid or not. In military staffs, this type of behaviour is very popular, materializing by filling out intelligence gaps with explanations based on one's own experience. The barrier to critical thinking in this case is mirror-imaging. This is an impediment based on complying the enemy actions to own way of action.

For example, if some information is missing, the staff will seek to fill these gaps with assumptions based on how their own forces would act in similar circumstances. An irrational behaviour perceived by the commander and the staff is to not fully understand the enemy's way of action and to use the mirror-imaging to solve the problem. This behaviour can have disastrous results in executing and conducting operations.

6. We look for evidence that supports our own beliefs, diminishing the value of other evidence that supports the contrary. This happens when the commander or the staff is in love with his own plan. Instead of looking for possible errors, they continue to support the validity of their own plan. In this way, our own beliefs become personal property to be defended at all costs. This type of behaviour is not desirable within the staff activity.

7. Another obstacle to critical thinking is the social acceptance behaviour. In particular, people feel attacked when their work is criticized and questioned. Actions carried out within a staff may obstruct the objective analysis. These actions are caused by misconceptions, conflicting approaches, personality differences, emotions, different communication skills, and the influence of senior officers in the decision-making process. Moreover, a climate based entirely on strict subordination relationships will inevitably lead to the annulment of critical thinking. Therefore, communication and expression of objective beliefs between staff members should be encouraged. There are certain behaviours like "that's what I have to do because i have done this before" or "we do it because that is the commander's order" even if it is obviously wrong. All these behaviours must be tackled within a military staff. Critical thinking is desirable to be initially encountered by the commander so that it goes through the chain of command and manifests its effects above the entire staff.

Perhaps the most significant psychological barrier to critical thinking is the mental effort. The stress, the pressure the commander is subjected to, the tempo, the fatigue, and lack of time can cause serious errors in MDMP.

Henry Ford said that "thinking is hard work, which is why so few people do it."<sup>55</sup>

*Logical fallacies* are another type of barriers to critical thinking because people are often unable to think logically but intuitively. Intuitive thinking is beneficial when all premises are credible, when all the information has been taken into account and when the premises are sufficient to draw conclusions. If one of these three elements is missing, intuitive thinking will have undesirable, if not catastrophic effects on the MDMP.

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<sup>54</sup> Bias is an American term introduced in social psychology and represents a tendency, preference or a subjective or supportive perception toward a perspective, outcome or ideology.

<sup>55</sup> Simple life strategies website, <https://simplelifestrategies.com/henry-ford/?cn-reloaded=1>.



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Logical fallacies or reasoning errors occur when the commander does not apply critical thinking. The role of critical thinking is precisely to discover and present the potential danger caused by this kind of errors.

The most common formal or informal logical fallacies observed in MDMP include among others:<sup>56</sup>

- appeal to authority - when an assumption is considered valid only because it is the commander's assumption;
- straw man - supporting an argument based on the distortion of an opponent's opinion;
- fallacy of composition - inferring that something is true of the whole from the fact that it is true of some part of the whole<sup>57</sup>;
- the false dilemma - it is assumed that there are only two alternatives when, in fact, there are more than two;
- proof by example - one or more examples are given to support a general statement;
- burden of proof - the opponent will have the responsibility to prove something;
- irrelevant conclusion (red herring or misdirection) - attempting to redirect the argument to another issue to which the person doing the redirecting can better respond;<sup>58</sup>
- faulty analogy - when two elements that appear to be similar but have totally different properties are compared;
- questionable statistics - assuming that because two things are alike in one or more respects, they are necessarily alike in some other respect.<sup>59</sup>

In order to make optimal decisions, commanders can apply the seven universal intellectual standards used to verify the quality of a reasoning; these are: clarity, accuracy, precision, relevance, depth, breadth and logic.<sup>60</sup> „In war commanders are constantly faced with great issues...so their decisions should be reached only after careful analysis and faultless logic.”<sup>61</sup>

A commander or a staff officer with vast experience or personality and strong beliefs will be the person who will see the overall picture, he will see what really happens even when the events take a new and unexpected turn. They are most likely to create their own psychological and logical barriers in making the right decisions. Despite our best intentions or relying on a set of verifiable information, „our minds can mislead us, giving us a false understanding of events and circumstances and causing our analysis of events and circumstances to be flawed.”<sup>62</sup>

Critical thinking evaluates both thinking processes and products resulting from these processes. We will imagine that when faced with making a decision, the commander will hear more voices dictating what he has to do. These voices will only discuss personal internal biases and mind-sets, as well as the nature of the problem to solve. Too often, decision-makers are willing to hear only those voices saying what they want to hear. This is, therefore, a common mistake behind the wrong decisions and, of course, the failure to meet the proposed objectives.

## **5. Applying critical thinking to the MDMP**

<sup>56</sup> <https://apps.dtic.mil/dtic/tr/fulltext/u2/a425924.pdf>.

<sup>57</sup> Logically fallacious website, <https://www.logicallyfallacious.com/tools/lp/Bo/LogicalFallacies/88/Fallacy-of-Composition>.

<sup>58</sup> Logically fallacious website, <https://www.logicallyfallacious.com/tools/lp/Bo/LogicalFallacies/150/Red-Herring>.

<sup>59</sup> Texas State University website, <https://www.txstate.edu/philosophy/resources/fallacy-definitions/Faulty-Analogy.html>.

<sup>60</sup> Richard Paul and Linda Elder, *Critical Thinking*, New York, 2001, p. 127.

<sup>61</sup> Milan N. Vego, *NWC 1004 Operational Warfare*, Naval War College, Newport, RI, 2000, p. 603.

<sup>62</sup> Morgan D. Jones, *The Thinkers Toolkit*, Three Rivers Press, New York, 1998.



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It is already a fact that critical thinking can radically improve MDMP. The question is how and when will the commander and his staff begin to use critical thinking?

The commander will have to choose between applying critical thinking or choosing old solutions to solve new and more complex problems. Thinking about thinking is a great achievement, because the largest computer ever existing, the human brain, is subject to errors. These errors will lead to a false approach and will create an erroneous perception of reality, based on what is to be seen to the detriment of what must be seen.

In order to become good critical thinkers we have to learn how to do it and we have to practice every day. Commander and staff should practice critical day-by-day thinking, whether we are talking about AFTER ACTION REPORT, HOT WASH-UP, OPLAN development, or war gaming.

In the following, I will present some ideas, from broad to narrow, that can become starting points for using critical thinking in the MDMP (why not in our day-by-day activities).

1. Thinking in time

A good commander does not live in the present. He will have a vision of the future and will use different tools to connect events and decisions over time. One of these tools is the scenario. Scenarios help the commander to predict possible outcomes and to plan and act in advance. They will not try to predict the future, but rather try to outline the possible future events and find the links between them.

The main purposes of the scenarios are to anticipate the risks and to discover those previously unknown options (branches and sequels). The scenarios include known or predictable information, as well as other critical but uncertain information for solving the problem.

2. Pursuing perspectives<sup>63</sup>

Specific mind-sets often lead to cumbersome and limited thinking processes, resulting flawed and irrelevant solutions. Limited perspectives are proof of poor understanding of the real problem.

The tools of the alternative analysis to combat the existence of these limited perspectives on solving the problem are, among other things, represented by the following techniques:

- thinking backwards - assuming that a conclusion is true we go through the reverse thinking process to observe and analyse the validity of the reasoning and evidence that led to that conclusion;

- devils advocate - it is permissible for the group or certain members of the group to be very critical regarding the decision made so as to find some erroneous aspects in the process that led to that decision;

- brainstorming - it is a technique that exploits creative perspectives by generating new ideas about a subject or new solutions to an existing problem.

Pursuing perspectives reveals possible mistakes, the presence of positive or group thinking and the excess of self-confidence.

3. Reasoning

In order to ignore both psychological and logical limitations that can affect the decision making process and the plan structuring, as well, the commander and his staff may have to punctually analyse every thought and reasoning. By explaining all opinions and hypothesis it is easier to create analytic circumstances to determine strengths or weaknesses of proofs. During operation planning, the staff is not always aware of the operational environment status, therefore uncertainty occurs. These losses can be prevented by using critical thinking, while a rigorous

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<sup>63</sup> <https://apps.dtic.mil/dtic/tr/fulltext/u2/a425924.pdf>.





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verification of the information that led to the conclusions will diminish any possible thinking mistakes.

4. Quick questions<sup>64</sup>

During staff activities, it often happens for the personnel to proceed to analyse the mission despite of the lack of information or preparation. This is a case when the staff will only solve a simple task, yet not the real one. Another technique involves using too many and complex facilities for a certain matter. Why use a hammer to break something when you can open it with a screw?

To avoid these tricks, during decision making process for a real problem the staff may turn to answering different questions. A critical mind will never stop wondering and questions will be the start line for every MDMP step.

For example, the answers for a very precise questions may validate the hypothesis for a certain course of action. Otherwise, the course of action will not be useful. By using the questioning method the staff will be able to explain not only the conclusions, but also the reasoning they're based on.

5. Competing Courses of Action (COA)<sup>65</sup>

This method can be used to develop, evaluate and compare the initially validated courses of action. Contrary to the conventional intuitive analysis, this technique relies on certain critical parameters, such as key factors or events or planning hypothesis. Better said, for an optimal course of action will be more likely less cons arguments rather than more pros arguments. Every argument will be used in such way for it to prove it is fitted to the course of action.

What makes this method valuable is that it concentrates more on disapproving the course of action rather than proving its validity.

## **6. Conclusions**

The use of thinking in a critical way is beneficial for many reasons. We must not forget that most of the thinking process is based on the so-called automated cognitive pilot and that, most of the time, we are not aware of the decision we make. Moreover, each one of us perceives and interprets the same thing in a different way; and if we also mention the possibility of discovering certain intentional errors that we are subjected to by those who want to trick us, we will demonstrate the necessity of using critical thinking in making the right decisions.

Critical thinking is a term that many people have heard about but few know how to use it systematically. That is why the commander must encourage such an optimal climate in which the critical thinking to take place. The lack of critical thinking within MDMP is often the cause of the failure of military action at any level. A decision taken without a critical analysis of the arguments and reasoning will be an erroneous decision or, in the best case, an incomplete decision.

Critical thinking is a mean used to improve the quality of analytical or intuitive decisions. Evaluating existing possibilities, generating new possibilities by challenging the thinking process at each individual level, discovering psychological or logical barriers, critical thinking is a first step in eliminating errors that occur in MDMP.

A critical mind will always see beyond the appearance of a possible problem, will find a viable and pertinent solution by using the strictly necessary resources and with minimal costs.

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<sup>64</sup> <https://apps.dtic.mil/dtic/tr/fulltext/u2/a425924.pdf>.

<sup>65</sup> Ibidem.



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Critical thinking leads to a comprehensive understanding of the operational environment and the discovery of the vulnerabilities of the plan and more than that of the entire decision-making process.

Within groups, regardless of their level, critical thinking minds must be encouraged and represent a sustainable share of the group's staff. As commander of a military entity you need to develop your capacity for critical thinking and have a broader openness to such behaviour, obviously embedded within the regulatory and legal limits.

This paper presents how to apply critical thinking in the military decision-making process, but the scope of application of critical thinking is vast and encompasses different areas: from those in everyday life to strategic decision-making.

What I wanted to convey through this work is the following idea: critical thinking is formed through a huge effort, over time, and involves the constant accumulation of new knowledge and the willingness to change your ideas. We have to be honest: it's not within everyone's reach...

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