# MILITARY LEADER'S OPERATIONAL CHALLENGES IN ADDRESSING EVER-CHANGING ENVIRONMENTS

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Abstract: As operational environments continue to evolve, military leaders face a broad spectrum of challenges, from rapidly changing technologies, geopolitical shifts, to increased threat diversity and the need to keep troop morale high in often difficult conditions. The aim of this study is to identify the main operational challenges and analyze their complexity, characteristics and impact on military leaders. This study also highlights the need for military leaders to develop a wide range of skills, including mental agility, critical thinking, adaptability, communication and resilience, and to remain open to continuous learning. These skills, combined with the use of technology, are necessary to respond effectively to new challenges and threats and contribute to the development of military leader resilience. The scientific research methods used to conduct this study are diverse, each with the ability to provide insight and solutions for military leaders.

**Keywords:** operational environment; challenges; military leaders; skills; resilience; technology.

## 1. Introduction

In a world marked by accelerating transformations, geopolitical instability and unprecedented technological progress, military leaders face an increasingly complex and unpredictable operational environment. This dynamic requires the simultaneous management of challenges ranging from advanced integration of new technologies, geopolitical changes to rapid adaptation to diverse threats. In the face of continuing technological challenges, leaders are forced to rapidly adopt and integrate innovations such as artificial intelligence, robotics, cyber technologies and autonomous systems, all of which are redefining the traditional parameters of warfare and military operations. In addition to technological innovations, military leaders must respond to diverse threats such as cyber warfare, global terrorism, and asymmetric conflicts, which require dynamic and proactive strategies. These complex challenges require not only anticipation of potential risks, but also operational agility to adapt quickly to changes on the ground. In addition, constant changes in the geopolitical landscape add an extra layer of complexity. This study sets out to analyze the operational environment and identify the operational challenges faced by military leaders, and as a response, to identify the skills required to deal with such an ever-changing environment. In parallel, consideration will be given to the analysis of the 20<sup>th</sup> and 21<sup>st</sup> century operational environment to further highlight contemporary operational challenges.

## 2. Research methodology

The research methodology is an essential element of this study, as it provides the framework for collecting and analyzing information in a systematic way. With the aim of analyzing the operational environment and identifying operational challenges, this study primarily aims to answer the following main research question (RQ): What are the operational challenges faced by the military leader and how can they be effectively managed? This question is the central pillar of the research, providing coherence, clarity, and direction throughout all stages of the research. In order to fulfill the two proposed research objectives (RObj) four secundary research questions have been formulated, two for each RObj. Table no. 1 correlates Robjs, RQs, and research methods (RMs) that will be used during this paper.

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# Table no. 1: Research Design&Methodology

Main	RQ:	What	are	the	operational	challenges	faced	by	the	military	leader	and	how	can	they	be
effecti	velv	manag	red?													

egjectively managed.								
RObj	RQs	RMs						
RObi <sub>1</sub> _Identification and analysis of the main operational challenges faced by a military leader in a changing	RQ <sub>11</sub> : What are the main factors contributing to changes in the operational environment?	<ul><li>literature review;</li><li>systemic analysis of information;</li><li>logical scheme.</li></ul>						
operational environment	RQ <sub>12</sub> : What are the differences between the 20 <sup>th</sup> and 21 <sup>st</sup> century operating environment?	<ul><li>literature review;</li><li>comparative analysis.</li></ul>						
RObj <sub>2</sub> _Identification of essential competencies and skills that military leaders need to develop to effectively	RQ <sub>21</sub> : What are the competences and skills required of a military leader in today's operational environment?	- critical literature review; - descriptive method.						
managing operational challenges	RQ <sub>22</sub> : How can these competences and skills be effectively developed to facilitate the leadership process?	- study and critical analysis of literature.						

# 3. Analysis of the operational challenges of the ever-changing environment

To highlight the changing nature and fast pace of the operational environment, it has been analyzed the operational environment in the 20<sup>th</sup> and 21<sup>st</sup> century in Table no. 2. The analysis focused on the nature of conflict, how combat is conducted, military training, technology and the domain in which operations are conducted. This type of analysis provides a clear picture of the rapidly changing operational environment and contributes to a better understanding of current and future needs and challenges.

Table no 2: The comparative analysis of the operational environments – 20th vs. 21th century

Characteristics	20 <sup>th</sup> Century	21 <sup>th</sup> Century
Nature of conflict	- traditional conflicts between states;	- the emergence of cyber warfare, non-state and terrorist groups, the intensification of hybrid threats.
Military training	- training for conventional combat and national defence missions;	<ul><li>the need for expertise in combating terrorism and cyber attacks;</li><li>international missions and exercises.</li></ul>
Tactics and strategy	- large masses of troops; - use of Blitzkrieg tactics, trench warfare; - World War I brought military advances in defense in depth as well as troop infiltration techniques (Weissmann and Nilsson 2023, p. 4); - World War II revolutionized the use of mobile armored units (Weissmann and Nilsson 2023 p. 4); - development of the concept of manoeuvre warfare (Weissmann and Nilsson 2023, p. 4);	- involvement of special operations forces (SOF), rapid reaction units, JOINT operations; - involvement of economic, political, social and environmental factors (Antunez 2021); - future wars will focus on urbanised environments (Weissmann and Nilsson 2023, p. 10); - focus on population support (Bados, 2010, cited in Antunez, 2021);
Technology and equipment	- conventional weapons: planes, tanks, ships; - introduction of the concept of revolution in military affairs (RMA) (Weissmann and Nilsson 2023, p. 5);	- integration of technological innovations: artificial intelligence, unmanned autonomous systems, sensors (Weissmann and Nilsson 2023, p. 5); - emerging and disruptive technologies (Weissmann and Nilsson 2023, p. 8).
Operational area	- land, air, maritime.	-land, air, maritime, space, cyber.

Also, to have an overview of this study, we have designed Figure no. 1 which includes the factors contributing to the changes in the operational environment and therefore to the operational challenges, as well as the competencies and attributes needed by the military leader. Later, in the development of this study, these will be defined and analyzed in more details. This design represents the mirror of this study, capturing all important aspects in a single scheme. What needs to be emphasized is that all these operational challenges have brought new characteristics to the operational environment, which are volatility, uncertainty, complexity and ambiguity (VUCA). In addition to these characteristics, operational challenges have led to complex approaches that integrate different operational domains such as land, air, maritime, space and cyber, facilitating the concept of multi-domain operations.

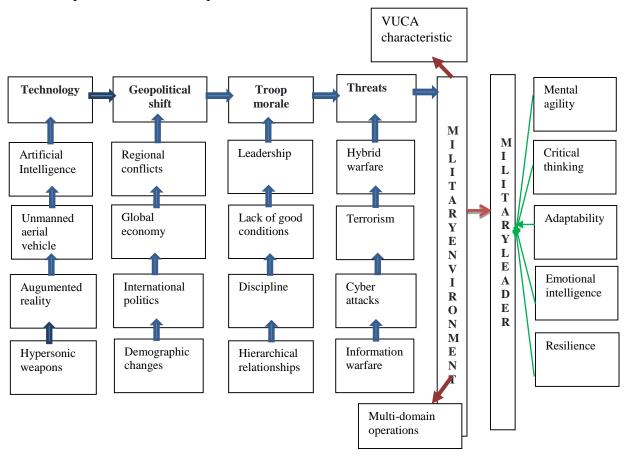


Figure no. 1: The operational challenges

(Source: Figure developed based on information from the systemic analysis of information and own research)

The figure that has just been presented is a summary of the study, integrating the determinants of changes in the operational environment, the related challenges and the necessary skills for the military leader in order to be able to form a clear picture of what the operational environment means. Next, the study proposes a detailed analysis of these elements, highlighting the importance of each in the operational context.

# 3.1. Technological advances

In the modern military operational environment, technology is both an opportunity and a challenge. The implementation of technology can significantly transform the way military forces plan and conduct operations, but it also brings many challenges that need to be managed effectively. As benefits, technology enables the rapid collection, analysis and distribution of critical information, contributing to well-informed strategic decisions. Autonomous vehicles and drones can also conduct reconnaissance or attack missions without putting soldiers' lives at risk. Last but not least, modern communication systems ensure connectivity between structures and efficient

coordination of operations, regardless of distance. New technologies require continuous adaptation, and their deployment must be fast and efficient to ensure battlefield superiority. In terms of challenges, technology presents cyber vulnerabilities as the increased reliance on computer networks increases the risk of cyber attacks, threatening the security and integrity of military systems.

The European Defence Agency (2023) agrees that "the development of novel disruptive weapons (such as hypersonic and directed energy weapons) will bring new opportunities and challenges to the battlefield. Others, like space technologies, artificial intelligence, nanomaterials, additive manufacturing, and quantum technologies will allow to change the way several military tasks are carried out, including command and control, communications, intelligence and surveillance, engagement, logistics or protection of forces." (p. 12).

Also, the introduction of emerging technologies on the battlefield represents an unprecedented revolution in the military. From artificial intelligence and autonomous drones to augmented reality and cyber warfare, these technological innovations not only bring efficiency and precision to military operations, but also strategically and tactically redefine the conflicts of the future. AI products that will support decision making will result, in addition to reduced time, reduced workload and improved command and control systems (Billing et al. 2020, p. 949).

The implementation of new technologies requires continuous staff training and rapid adaptation to technological change, and over-reliance on technology can lead to the loss of traditional essential skills and a possible inability to operate effectively in the absence of technological equipment. Technology, while advanced and indispensable, can never exceed the importance of knowledge of the political, socio-cultural or historical side of a conflict. Every conflict is deeply rooted in history, culture and politics, and the integration of accumulated knowledge, in order to formulate effective strategies and evaluate their implementation, is essential. The knowledge deficit stems from over-reliance on technology and the belief that technology alone can solve conflicts. In reality, success on conflict management clearly depends on integrating technology with an understanding of political, socio-cultural and historical factors developed over time (Robinson et al. 2014, p. 2).

On the battlefield, technology is an important asset, but it cannot guarantee victory because there are several issues that need to be considered. Quick decisions, troop morale and cohesion, the ability to adapt to changing conditions and exploit enemy vulnerabilities, and logistical support are essential. History teaches us that success on the battlefield depends on a combination of technology and human, political and cultural factors. This idea is supported and demonstrated by the many conflicts of the 20<sup>th</sup> and 21<sup>st</sup> centuries. Examples include the German army, the Swiss army in the Vietnam War and coalition troops in Afghanistan, who, despite having considerable technological advantages, failed to achieve their objectives. During the Second World War, Blitzkrieg tactics initially worked for the German army, but as the war progressed, this strategy was thwarted. Also, the US army lost out by not understanding the cultural and political context, and last but not least, coalition troops lost out because of the difficult terrain and the taliban's motivation to fight on their own territory (Andric 2018, p. 29).

Consequently, technological advances in the operational environment have a profound impact on the way military operations are conducted. As was seen in the case of the Ukrainian war, drones, artificial intelligence, autonomous systems and advanced communications have completely transformed traditional warfare. These technologies have the potential to increase efficiency, reduce risk and enable more accurate and faster operations. To reap these technological advantages, the military must place a high priority on investing in research and development to ensure military forces remain at the forefront of technological innovation. Also, in terms of training and education, consideration should be given to introducing training modules for military personnel that include the use of new technologies, as well as updating university curricula to include concepts specific to emerging technologies. Investment in cyber security is also vital, especially when it comes to protecting critical infrastructure. Technology continues to redefine the operational environment and constant adaptation is essential to capitalize on the opportunities offered by technological advances.

## 3.2. Geopolitical shifts

Geopolitical shifts are producing significant transformations on the battlefield, remodeling alliances and shaping new military strategies. These changes require military to adapt quickly and effectively to new political and economic realities. In a changing world characterized by regional conflicts, population migration, competition for resources and global influences, militaries have to cope with a complex and often unpredictable operational environment. Adaptability and international cooperation thus become essential to maintain security and operational effectiveness in this dynamic context.

The conflict between Russian Federation and Ukraine clearly illustrates the complexity of geopolitical challenges. Beyond the devastating human impact, it has disrupted international and economic relations, generating global instability and insecurity. In the context of such a conflict, states and institutions are forced to take swift and decisive action to counter the negative effects and maintain regional stability. Barwiński (2005) argues that "geopolitical transformations in Europe caused not only far-reaching changes in the political, territorial, economic and social aspects of the continent but also heavily influenced defence doctrines and military potential in all countries concerned" (p. 1).

Furthermore, the emergence of new actors on the global stage, regional conflicts and competition for various resources constantly transform the geopolitical landscape, thus affecting the operations process, with a significant imprint on planning and execution. In this regard, geopolitical changes require armed forces to be more flexible and adaptable. Military strategies need to evolve rapidly in response to new realities, with an emphasis on asymmetric conflict preparedness and international collaboration. Flexibility and anticipation are essential to respond effectively to today's challenges, and updating defence strategies to meet new threats and preparing for asymmetric conflicts is essential. Also, to face geopolitical changes it is necessary for military forces to take part in international missions and conduct joint exercises and training to ensure interoperability between allied forces.

## 3.3. Troop morale

In the operational environment, maintaining high troop morale is essential to mission success and unit cohesion. Morale refers not only to the mood of soldiers, but also to the level of motivation, confidence and determination with which they carry out their missions. In a world characterized by complexity and multiple risks at every step, maintaining high morale is vital to ensure the rapid and effective responsiveness of troops, to promote a spirit of camaraderie and resilience, and to sustain operational efforts over the long term. High morale is built through leadership, adequate psychological support, recognition of performance, and ensuring optimal readiness and equipping, all of which help turn operational challenges into opportunities.

High morale is a combination of mental and spiritual strength, including courage, self-discipline and resilience. In peacetime, high morale is achieved through sustained and robust training, but also through the encouragement of team spirit, which creates an environment where soldiers feel supported and motivated, but in wartime, morale is reflected in the determination of soldiers to do their duty in every possible circumstance, even at the cost of their lives. This level of devotion not only increases combat effectiveness, but also inspires comrades and can influence the outcome of conflicts. Cheerfulness and selflessness, being considered hallmarks of high morale, are factors that nurture psychological resilience and strengthen bonds between soldiers, creating a stronger unit (Baynes, 1998, cited in Burwell, 2000, p. 4).

In the following, through study and analysis of literature sources, we have identified factors that affect troop morale. The authors find that the following factors affect troop morale in the US Army: lack of clarity and purpose of mission, lack of success on previous missions, lack of mutual respect, poor leadership (Reed et al. 2011, p. 210). In the New Zealand Army, Williams (2002), finds that the following factors affect troop morale: training, leadership, discipline, welfare, communications and information, social and political influences (p. 3). On the other hand, in the UK Army, the following

factors have been identified as influencing troop morale: feelings of unfairness and not being fair, good accommodation, lack of quality food, routine duties and the relationship between junior officers and their subordinates (Jones, 2012, p. 16). To highlight the interdisciplinarity nature of the problem addressed, the morale challenges are carefully analyzed in other domains such as business, management, etc. For instance, in different companies, the following challenges were identified as influencing employee morale: lack of a well-defined company purpose, lack of employee inspiration, not taking into account employee vision (Sinek, 2009, p. 220), "repetitive tasks, long hours sitting still and occasionally rude customers" (Sinek, 2014, p. 150).

On these grounds, to ensure high morale, it is crucial to pay attention to the physical, psychological and emotional needs of the military. Training military leaders to communicate openly and empathetically, building trusting relationships with subordinates and providing opportunities for training and professional development, along with taking an interest in the physical health of military personnel through special programs and recreational activities, are some of the methods that can maintain high morale.

## 3.4. Threats

Hybrid threats are a major challenge in the 21<sup>st</sup> century military operational environment. They represent a complex and emerging challenge for the modern military operational environment. These threats combine conventional and unconventional techniques, such as cyber attacks, disinformation, information warfare, the use of paramilitary forces and economic means, to create a combined effect that is difficult to counter. Their multidimensional nature requires adaptability and innovation on the part of military structures, which must develop new strategies and capabilities to respond effectively to these challenges. International cooperation, continuous training and the integration of advanced technologies are essential to counter hybrid threats and ensure security in an increasingly complex and volatile operational environment.

Hoffman (2011) suggests that "hybrid wars can be conducted by separate units or kinds of forces – or even by the same unit – but are generally operationally and tactically directed and coordinated simultaneously within the main battlespace to achieve synergistic effects in the physical and psychological dimensions of conflict"(p. 17).

Other authors consider that "a hybrid threat is characterized as possessing decentralized command and control, distributed military and non-military activities, combines traditional, irregular, terrorist and disruptive criminal methods, exploits complex operational environmental conditions, and operates with intention to sacrifice time and space in order to achieve decision by attrition" (Glenn, 2009, cited in Fleming, 2011, p. 36).

In the context of the current conflict between Russia and Ukraine, hybrid threats have become a dominant and essential element in understanding battlefield dynamics. They not only amplify the intensity of the conflict, but further complicate international response and defence strategies. The aggressive actions demonstrated by Russia in the war with Ukraine have resulted in a series of events that affect both the European and transatlantic security systems. In an era when the borders of nations are perceived not only geographically, but also economically and politically, the Kremlin's hybrid actions are destabilizing the region from the Baltic to the Black Sea. This destabilization clearly poses a major threat to peace and security in the region. Russia's hybrid warfare involves a combination of military, political, economic and cyber tactics to influence and dominate. Its effects are all the more serious because it attacks the most vulnerable points of the targeted nation. Through this strategy, Russia aims to erode trust in governments and institutions, influence public opinion, and cause instability (Bratko et al. 2021, pp. 148-149).

In addition to hybrid threats, the fight against terrorism is another complex challenge, being a form of unconventional warfare. Terrorism, by its nature, turns fear into a central strategy, targeting Western symbols and vulnerable societies. In a calculated and cruel way, terrorism exploits social weaknesses and tensions to create panic and terror and manages to implement a unique combination of violence, creativity and rationality, redefining the classical concept of war. This modern form of warfare requires innovative and flexible countering strategies, involving

both armed forces and civilian community efforts (Szenes 2018, p. 92). In this conflict, the protection of civilian populations becomes paramount and collective engagement, and security systems play a crucial role. International collaboration between states, institutions and non-governmental organisations is also essential to prevent the spread of terrorism and to support global stability and security.

In the digital age, information has become a powerful weapon, capable of influencing decisions and destabilising entire nations without the use of firearms. This form of warfare involves the strategic use of information to achieve desired military advantage, whether through disinformation, propaganda, cyber attacks or psychological operations. Its multiple dimensions include cyber-attacks on critical infrastructure, manipulation of social media to influence public opinion, and dissemination of fake news to cause panic or mistrust. Such tactics can create confusion and disorganisation among enemy forces, undermining their ability to make effective and rapid decisions. Nichiporuk (2002) argues that the goals of information warfare are "to deny, corrupt, degrade, or destroy the enemy's sources of information on the battlefield" (p. 189).

If information warfare focuses on manipulating and controlling the flow of information, cyber attacks focus on the integrity and availability of information systems and data. Another threat to the operational environment is cyber attacks. Ho Wei Sang (2016) believes that "cyber attacks on critical infrastructures such as the energy, transportation and communications sectors could seriously undermine military mission success since the infrastructures are critical in supporting the conduct of military operations" (p. 28).

By identifying and analysing both the factors contributing to changes in the operational environment and the differences between the 20<sup>th</sup> and 21<sup>st</sup> century operational environment, we consider that the first objective has been achieved.

Consequently, the allocation of resources for research and development in critical areas such as artificial intelligence and cyber defence, as well as the implementation of training programs that include real simulations of possible threat scenarios are necessary in the context of threats specific to the operational environment. Another way to counter these threats is to constantly monitoring risks by setting up systems capable of regularly assessing risks in order to anticipate new types of threats. Managing threats in the military operational environment requires an integrated and multidimensional approach, based on advanced technology, flexibility, international collaboration and continuous training.

# 4. The qualities required of a military leader to meet the challenges of the operational environment

Military leaders are faced with complex and unpredictable challenges on a daily basis. To respond effectively to these challenges, military leaders must possess a set of essential skills that enable them to deal with uncertainty and make quick and effective decisions. Among these skills, critical thinking, emotional intelligence, mental agility, adaptability and resilience play a crucial role.

In the operational environment, every decision has major consequences for the success of missions. Critical thinking is essential in this context and involves objective evaluation of information, analysis of complex situations and logical reasoning to make effective decisions. More specifically, 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" (Guillot 2004, p. 3). In a VUCA word, the ability to think critically helps leaders to adapt, solve problems and react appropriately to challenges. Critical thinking is not only useful, but indispensable for ensuring the success of operations and protecting military lives.

Although critical thinking plays an important role in military leadership training, Goleman (1998) emphasizes the importance of emotional intelligence and argues that "without it, a person can have the best training in the world, an incisive, analytical mind, and an endless supply of smart ideas, but he still won't make a great leader" (p.3). In contrast, Grothe (2009), considers both adaptability and mental agility to be two of the skills required of a military leader in the 21st century. While, mental agility is "flexibility of mind and a tendency to anticipate or adapt to

uncertain or changing situations" (FM 6-22, cited in Grothe 2009, p. 16), adaptability is "encouraged by a collection of thought habits that include open-mindedness, ability to consider multiple perspectives, not jumping to conclusions about what a situation is or what it means, willingness to take risks and being resilient to setbacks" (FM 6-22, cited in Grothe 2009, p. 4).

Lastly, resilience ensures that leaders can cope with stress, recovering quickly and maintaining their effectiveness in a highly demanding environment. In the authors' view, a leader who is resilient accepts reality, has clarity about his or her goals, and has the ability to quickly and effectively find new solutions (Coutu, 2002, cited in Sanaghan, 2016).

Thus, critical thinking helps to assess the potential and tactics of opponents, emotional intelligence maintains team cohesion, mental agility enables rapid adjustment to change, adaptability ensures effective use of resources, and resilience helps to overcome failures to continue the mission. These skills contribute to the development of a military leader capable of meeting challenges and leading effectively in a changing environment. These skills are not only necessary, but are becoming an integral part of ongoing training and leadership development in the modern military. Their systematic development and improvement ensures optimal preparation for operational challenges.

In addition to the qualities described above, the well-known military theorist Clausewitz (1989) argues that, primarily, the following two qualities are necessary for a soldier: "in the first place an intellect which, even in the midst of this intense obscurity, is not without some traces of inner light, which lead to the truth, and then the courage to follow this faint light" (p. 102).

To develop and maintain these skills, it is important for military leaders to participate in leadership courses that include such training and in exercises both nationally and internationally, and through simulations and tactical scenarios to solve complex problems under pressure. Performance evaluation is also necessary for the military leader to discover their gaps and work where they need to. By applying these methods, military leaders can develop and maintain the skills needed to successfully face the dynamic challenges of the operational environment. Investing in these essential skills not only improves individual performance, but also supports the cohesion and effectiveness of military structures.

By identifying both the competencies and skills needed by the military leader and methods for developing and maintaining them, we believe the second objective has been achieved.

#### CONCLUSIONS

At the end of the research paper, it can be concluded that today's military leaders face a complex set of challenges that constantly test their skills and resilience. Rapidly evolving technology requires military leaders to keep abreast of new technological developments and to integrate them effectively into their operational structures and strategies. Technologies such as artificial intelligence, autonomous drones and cyber are transforming the way military operations are designed and executed, offering significant advantages but also introducing new vulnerabilities. The ability to rapidly assess the impact of these technologies and make tactical adjustments requires a new vision of modern warfare. The hybrid nature of threats, combining elements of terrorism, cyber warfare and information propaganda, adds yet another layer of complexity to the operational environment. Military leaders need to develop methods for real-time reaction and response to these threats, using multi-dimensional and collaborative approaches. Geopolitical changes also add another layer of complexity, requiring continued flexibility and adaptability in the planning and execution of operations. Last but not least, maintaining troop morale is essential in this context, and military leaders need to inspire confidence, offer clear guidance and provide the necessary support to keep subordinates motivated and resilient under pressure.

The presented study is not perfect, due to the fact that it has some limitations as its qualitative nature or highlighting only a few operational challenges which are presented from a simplistic perspective. For this reason, it is recommended to continue the addressability of the operational challenges from a quantitative and more comprehensive perspective, which should emphasize the manifestation of different challenges from multiple dimensions and in a corelated manner with the main focus on examining the impact of these challenges on each activity of the operations process.

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