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ALL TEXTS ARE THE SOLE RESPONSIBILITY OF THEIR RESPECTIVE AUTHORS



Editorial



Major General Lino Loureiro Gonçalves
Military Academy Commander

Dear readers,

It is with particular pride and a deep sense of purpose that the Portuguese Military Academy presents this special edition of *Proelium*, dedicated to the International Seminar on Military Leadership (ISMIL), held on 15 and 16 May 2025. This event marked the first edition of an international seminar that is intended to become a regular, annual event, bringing together academics, researchers, and military professionals from Portugal, the United Kingdom, Spain, Bulgaria, Greece, Latvia, Lithuania, Norway, Poland, and Romania in a space for strategic reflection on the contemporary challenges of military leadership.

ISMIL was structured around three major thematic panels, each preceded by a plenary opening session. In these sessions, invited speakers of recognised national and international relevance shared their insights on the key topics under discussion, setting the tone for the debates and framing the central issues of each area. These inaugural contributions, of high strategic and institutional value, helped enrich the overall framework of the seminar and promoted dialogue between different schools of thought and professional backgrounds.

Moreover, it is worth noting the welcome and opening speech by the Deputy Chief of Staff of the Portuguese Army, Lieutenant-General Paulo Emanuel Maia Pereira, which we also publish, as well as the presentation given by the keynote speaker, Lieutenant General João Boga Ribeiro, who addressed the subject Military Leadership Challenges in 2025. Both were fundamental to initiating the subsequent discussions.

Complementing these sessions, scientific communications were presented by researchers and professionals, forming the true core of ISMiL and the driving force behind this special edition of *Proelium*. These articles explore the themes in greater depth, grounded in empirical research and academic rigour, and offer a broad and critical perspective on the key challenges facing contemporary military leadership.

The first panel, Military Leadership and the War Challenges, was opened by Brigadier Leigh Drummond, from the Centre for Army Leadership (United Kingdom), and Lieutenant General Lemos Pires, Director General for National Defence Policy (Portugal), who reflected on the evolving nature of warfare and leadership in operational environments.

Following this, the articles included in this volume address, among other topics, psychological warfare as a strategic tool in the 21st century, the role of international humanitarian law as an ethical and legal framework in a volatile global system, and cultural factors in combat decision-making, with a case study on naval responses to attacks in the Red Sea. These contributions provide a well-founded analysis of modern armed conflicts and their impact on military leadership.

The second panel, Military Leadership and Technological Challenges, featured opening contributions from Colonel Anselmo del Moral Torres, from the Centro Universitario de la Guardia Civil (Spain), and Lieutenant Colonel Wilson Antunes, from the Military Laboratory Unit for Biological and Chemical Defence (Portugal), who explored the emerging connections between technology and command.

Alongside these reflections, the scientific articles now published examine the use of machine learning to predict self-leadership among military cadets, highlighting the potential of artificial intelligence to support leadership development, as well as the relationship between leadership styles, engagement, and motivation in the context of military academies. These studies illustrate the growing importance of technology as a tool to support leadership and optimise organisational performance.

The third and final panel, "Military Leadership and Human Challenges," was opened by Colonel Juan Pavón Coto from the Centro Universitario de la Defensa (Spain) and Lieutenant Colonel Nuno Monteiro from the Portuguese Armed Forces University Institute, who emphasised the centrality of the human dimension to effective command.

In line with this framework, the articles presented in this section of Proelium explore topics such as the prevention of PTSD among Portuguese peacekeepers, leadership self-efficacy in joint teams, the impact of servant leadership on psychological empowerment and engagement, and the influence of leadership styles on talent retention and stress management. Other papers address military leadership in the context of climate change and propose an "emotional toolbox" for leaders operating under demanding conditions. Together, these contributions reinforce the idea that leading today also means having a deep understanding of people – their limitations, motivations, and transformative potential. The success of this first edition of ISMiL was made possible thanks to the strategic support and institutional trust placed in it by General Eduardo Ferrão, Chief of Staff of the Portuguese Army. The commitment to developing military leadership was instrumental in enabling the realisation of this vision. We are also deeply grateful to the foreign guest speakers, whose presence and thoughtful contributions enriched the seminar's debates and strengthened its international scope.

With ISMiL, the Portuguese Military Academy reaffirms its commitment to a form of leadership that combines operational excellence, critical thinking, and ethical responsibility. This special edition of Proelium is not merely a reflection.

May these pages serve as a starting point for new ideas, renewed dialogue, and, above all, for the sustained development of informed, visionary, and profoundly human military leadership.

Enjoy your reading!

Lisbon, the 30th of June of 2025,

Major General Lino Loureiro Gonçalves

Military Academy Commander

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International Seminar on Military Leadership

Opening Lecture by His Excellency, the Lieutenant General Deputy Chief of Staff of the Portuguese Army

Distinguished Lieutenant-General João Boga Ribeiro, Commander of Personnel of the Portuguese Army,

Distinguished Lieutenant-General Nuno Lemos Pires, National Defence Policy Director,

Distinguished Major-General Lino Loureiro Gonçalves, Military Academy Commander,

Distinguished Brigadier Leigh Drummond, Deputy Director of the Centre for Army Leadership from UK,

Dear Friends of the Spanish Royal Army,

Distinguished Academic and Scientific Authorities from our Academy and Universities,

Distinguished Moderators and Lecturers,

Esteemed Generals Officers, Sergeants, Soldiers and Civilians of the Army, Navy and Air Force,

Distinguished Guests,

Ladies and Gentlemen,

It is with great enthusiasm and commitment that the Portuguese Army and the Military Academy hold this International Seminar on Military Leadership, in compliance with the vision of His Excellency the General Chief of the Army Staff, General Eduardo Mendes Ferrão, which encourages the promotion of active Leadership, implementing

a close and attentive attitude that consolidates discipline, cohesion and enhances military performance. It is critical to prepare the future leaders for the challenges that we are facing.

Military leadership, being a context-dependent domain, needs to be analysed, studied, discussed and taught, ensuring the ability to harmoniously follow developments, share experiences and learn from those, laying the foundations that may guarantee the necessary confidence to face the challenges in a conflict environment.

We are currently witnessing a time of profound and fast changes in different areas, particularly regarding security and defence, which consequently affect our way of thinking, how we prepare, how we plan and, consequently, exercise leadership.

This seminar aims to achieve the goal of analysing the current human, technological, ethical, strategic, operational, environmental and even legal challenges.

Therefore, I would like to congratulate the Military Academy for this initiative and organisation, and hope this event will be an open forum for discussion. I am confident that the conclusions that will emerge from this Seminar provide warnings, models to follow, lessons to be learned, but above all, ideas for how to prepare our staff and our talents to lead military professionals that chose carrying out complex and demanding missions, where we will have to lead and enforce combat operations, dispel our fears and motivate EVERYONE to face the difficulties that today's combat entails.

The current operational environment is indeed a challenging context that encompasses different domains. I would dare to say that it is more difficult than ever to lead and motivate people, motivate our talents in multi-domain operations within complex contexts.

If in the past superiority was guaranteed by the principle of mass and the conquest or possession of terrain, today the dominance of information, perceptions and artificial

intelligence technologies can have devastating effects, which is why the ability to act immediately and globally is crucial.

Only with prepared, trained leaders, with cohesive teams in which everyone counts, will we meet and overcome the challenges that we have to face.

We therefore need leaders who are oriented towards innovation, not averse to experimentation, who are competent, approachable and capable of taking risks. In summary super leaders!

The Army is an institution that has a deep-rooted risk culture, where at all levels and echelons, from strategic to operational and tactical, decision-making is carried out under uncertainty, which is why commanders need to be able to act in environments that often provide incomplete and highly volatile information.

Regarding training, risk should be met in the context of innovation, supporting tolerance to failure in experimentation, as an evolutionary mechanism to achieve a final state. Ultimately, failures accepted in the context of innovation will contribute to minimising the Army's risk in operations.

We must prepare new leaders for teamwork, for a sense of belonging that unites us, as the preparedness for combat, quick decision-making, trust in those who lead us and the full acceptance of each person's relevance, is essential for the unity of the team in the most critical moments and the unconditional acknowledgement that work and everyone's responsibilities are a differentiating factor in the success and fulfilment of every mission, at all levels, in all echelons.

This is why the imperatives of the current security and defence context determine that Mission Command and Leadership based on a more collaborative model are of particular importance, seeking to value PEOPLE, giving them AUTONOMY, treating them with RESPECT and instilling in them a sense of BELONGING TO THE ORGANISATION.

Within this framework, we deem it appropriate to:

Maximise the role of soft skills, namely Emotional Intelligence, empathy and communication, among others;

- ✓ Fully embrace the Duty Command - telling the truth and ensuring better conditions for our soldiers, through attentive, close and human leadership;
- ✓ Promote the importance of being constantly and timely aware of all alert signs for intervention.
- ✓ Pay special attention to the impact of leadership, as part of the resilience of organisations, for the success of Military Forces on extreme context scenarios, preparing our young people to lead with the worst to be expected, maximise the combination of the appropriate attitude with the fulfilment of the mission.

The strength of the Army ultimately lies in the people. Today, more than ever, it is essential to care for the physical and psychological well-being of the personnel, promote healthy organisational cultures, and lead with empathy, ethics, and emotional intelligence.

The context in which Military Forces and Military Leaders operate brings together, in the same scenario, uncertainty, risk management, ethics, legal responsibility, quick and multidimensional decisions, loss of human lives and suffering, public condemnation, and perception management, all is nowadays integrated in a myriad of technologies that transform the operational framework into a deeply challenging environment.

In this context, multi-domain leadership is assumed to be decisive; leadership that is intellectually capable, emotionally balanced, ethically oriented, adaptable, needs to be implemented with a spirit of service and the ability to influence and motivate others; based on and grounded in the values that unite us and that we practice in our daily activities.

We believe that the cost of inaction is higher than the cost of action. We should therefore invest in leadership, encourage preparation and learning, as a factor of success in the most demanding situations.

This is the example of the Photo displayed, where our Chief of Staff is taking part, side by side, with our soldiers and doing the same they perform.

This Leadership Event is another opportunity to bring together this strong Community of Interest, to challenge ideas and, in addition to sharing knowledge and identify improvements to be implemented for training and in operational context.

Each lecture, each panel, each discussion will certainly offer an opportunity to broaden our perspective and, perhaps, even inspire new ideas that drive us to implement solutions, to face the real problems.

Vision, Courage, Openness and Sharing will be decisive principles to ensure that what we think, what we innovate, the solutions we propose will have a positive and consistent impact in our readiness to fight.

Aware of the relevance of this Event, EVERYONE, Army, Military Forces and Academy must be connected, focused in and finding solutions that allows our talents to face, in a more informed and capable way, the current and future combat situations and the realities that leaders are facing in order to anticipate, prepare and transform their missions.

Commitment to the mission, loyalty to the Motherland, respect for others, and serving with Honour are values of the military ethos and of the Military Leader.

I hope that this International Seminar inspires and strength these principles and that tomorrow's leaders will increasingly become examples of competence, courage, resilience and determination, which are essential in our operations within the global framework of a ready, resilient Army, united by the core values of service, but above all ready to serve, prepared to fight and

Since ever defending Portugal.

Lisbon, the 15th of May of 2025,

Lieutenant General Paulo Emanuel Maia Pereira

Deputy Chief of Staff of the Portuguese Army

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Theme I – Military Leadership and the War Challenges

MILITARY LEADERSHIP IN THE 21ST CENTURY: PSYCHOLOGICAL WARFARE

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ABSTRACT

The geopolitical context of the 21st century has been marked by a radical transformation in the dynamics of conflicts and the role of the armed forces. The rupture of the traditional pattern of warfare with the rise of information and communication technologies has contributed to the evolution of Psychological Warfare as one of the most powerful strategies in the military arsenal, becoming essential in modern military leadership. In an increasingly digital and interconnected environment, the manipulation of information and psychological influence is not limited to the physical battlefield, but extends to the cyber spheres, establishing new challenges for military leaders.

This research aims to analyse how military leaders have adapted to Psychological Warfare in contemporary conflicts, in an era marked by information and persuasion techniques. As well as the impact of Psychological Warfare on the morale of military forces, on communication strategies, diplomacy and ethical issues and the importance of military leadership adaptable to the complex dimensions of Psychological Warfare and information.

Keywords: Military History; Military Leadership; Psychological Warfare; Propaganda; Contemporary Conflicts.

1. INTRODUCTION

War as a phenomenon of organized violence between two armies – which forms the basis concepts of war, has been undergoing changes due to the constant shift by the emergence of the new wars and new doctrines. In the new warfare contexts, the standard set by classical military literature (Clausewitz and Machiavelli) that war is the continuation of a political objective and that no means should be spared to achieve it, requires some requalification.

Leadership is fundamental to maintaining the balance of civil society in any context, particularly in upholding principles and guidelines that ensure political cohesion and social order. In the military domain, leadership is one of the fundamental pillars, being directly linked to the effectiveness of the armed forces.

According to the Headquarters Department of the Army, "Leadership is the act of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organisation." In this sense, the leader and/or military commander play extremely important roles. History has witnessed the military leader not only as a commander and strategist but also as an essential element in management, motivation, and the morale of the troops. However, the leader's mission has evolved in accordance with the development of warfare, science, and technology.

The 20th century experienced firsthand the consequences of scientific and technological advancements and the importance of leadership in these challenges. One substantial change was the emergence of new doctrines of warfare that introduced unconventional conflicts to the world—conflicts that challenge the boundaries of traditional warfare and the physical domains of the battlefield, compelling the leader to adopt different characteristics. That is, an unconventional conflict forces the leader to distance themselves from traditional lines and concepts of leadership (Rosinha & Matias, 2015, p.25).

Unconventional wars raise various issues that spark debates extending beyond the age-old discussion about the legitimacy of war. In this scenario, studies on human violence are introduced, meaning that human behaviour and its relationship with war begin to be analysed with greater relevance, detail, and depth. In this sense, it is impossible to dissociate human behaviour from war, just as from leadership – "command actions involve the ability to influence human behaviour, gaining the trust of soldiers to achieve common and ethically acceptable objectives." (Matias, 2015, p. xiii).

The evolution of conflicts in recent years has shown the increasing use of Psychological Military Warfare – is an important operational tactic for achieving the desired outcome and a complementary strategic tool for leadership in contemporary conflicts. In this sense, what changes does this new context bring to military leadership?

This article explores the intersection between military leadership and psychological warfare, analysing how the effectiveness of military leadership can be amplified using psychological techniques on the battlefield and in managing subordinates. Although there is a growing academic interest in these topics in isolation, there is a significant gap in the literature regarding the integrated approach to these themes. The absence of consolidated theoretical models articulating military leadership and Psychological Warfare and their application highlights the need for conceptual and empirical deepening, justifying the scientific relevance of this research.

2. MILITARY LEADERSHIP AND PSYCHOLOGICAL WARFARE

Leadership is a complex concept, and according to Stogdill, "There are as many definitions of leadership as there are people who have attempted to define it." (Rosinha & Matias, 2015, p. 9). According to Borges, this act of commanding "is the process of influencing, beyond what would be possible, through the exclusive use of the invested

authority, human behaviour with a view to fulfilling the purposes, goals, and objectives conceived and prescribed by the designated organisational leader.” (Soares, 2023, p. 4).

Military sciences have dedicated themselves to studying military leadership, analysing the performance and behaviour of the leader—the military leader is the individual who bears the responsibility of motivating and influencing individuals subordinate to their leadership (Soares, 2023, p. 9). This individual must demonstrate a high capacity for decision-making and, consequently, create communication strategies, especially when the environment is adverse, as is the case in a war scenario.

The evolution of warfare and the international context defined at the beginning of the 21st century introduced the need to find new leadership strategies; that is, for an unconventional war context, an unconventional leader is required (Rosinha & Matias, 2023, p. 26).

“"With September 11, ethical aspects gained a new perspective—how to deal with an enemy that does not follow the same ethical principles of war, that uses civilians as shields and conducts suicide attacks? It is up to strategic leaders to manage this issue and communicate their type of engagement to society.” (Rosinha & Matias, 2023, p. 17).

During an armed conflict, the military leader is a manager of resources and, to do so effectively, must have both theoretical and practical knowledge of the studies that underpin leadership capacity. Image 1 shows the characteristics associated with leaders.

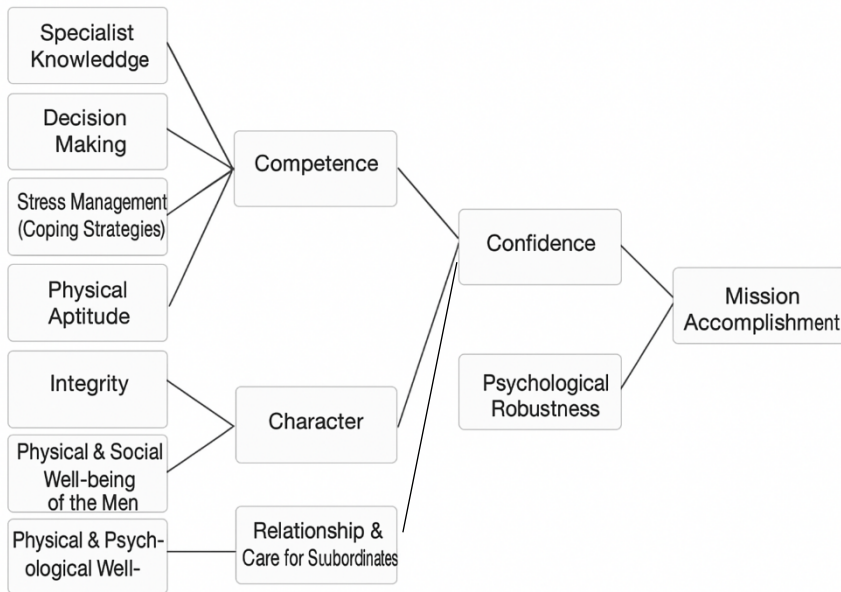


Figure 1: Characteristics of military leaders.

Source: (Rosinha & Matias, 2023, p. 14)

Throughout history, there is no noticeable substantial change (Kirchner & Akdere, 2017, p. 357-359) in the objectives and stages of training to which the leader is subjected – According to the Department of the Army, “Army leader development is achieved through lifelong synthesising of knowledge, skills and abilities from a combination of education, training, and experience.”. (Kirchner & Akdere, 2017, p. 358). However, the introduction of new technologies presents new challenges not only to the individual but also to the leadership doctrine itself. Military training equips a leader with sufficient knowledge to plan missions effectively and achieve the objective, regardless of the scenario (Rosinha & Matias, 2023, p. 25). The leaders must be trained for psychological resilience, and how to respond effectively to

psychological operations. In addition, they should develop a strong digital literacy, enabling them to operate in complex information's environments. In this sense, these individuals "should be the agents of change regarding the cultural literacy of their subordinates" (Rosinha & Matias, 2023, p. 26) and know how to find a balance between the art of war and social science.

Social sciences such as psychology, history, and sociology prove to be essential in the development of training programmes for leaders, particularly in the psychological domain (Soares, 2023, p. 4). Leadership thus presents itself as an interdisciplinary concept, interconnecting military sciences, psychology, and sociology (Rosinha & Matias, 2023, p. 26). The social dimension is of utmost importance in establishing a relationship between the leader and the subordinate – only in this way can successful leadership occur (Gazapo, et al, 2015, p. 183).

The military leader's ability to adapt to problems that arise in austere environments is known as adaptive leadership (Gazapo, et al, 2015, p. 184) – this corresponds to a conflict environment in which five contexts may challenge a leader's capacity to adapt, as shown in Image 2: "temporal location, the magnitude of consequences, the likelihood of consequences, physical and psychosocial proximity, and finally, the nature of the threat." (Gazapo, et al, 2015, p. 184).

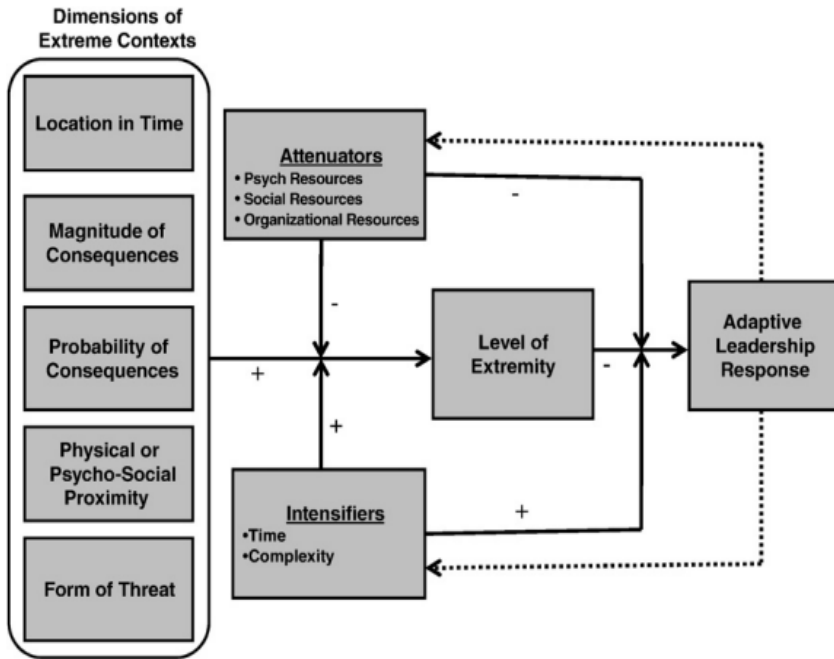


Figure 2: Typology of external contexts.

Source: (Hannah, 2009, p.899)

Ethical leadership is one of the fundamental concepts in studying this theme, that is, "(...) the demonstration of normatively appropriate conduct (...) and the promotion of such conduct to followers."(Frescata, et al.,2015, p. 86). Ethics is part of the genesis of military conduct; therefore, it is essential for effective leadership—this concept reinforces the presence of conduct and norms that must be followed, whether during training or in the performance of official duties, such as missions (Soares, 2023, p.9-10).

According to Christopher Barnes and Lieutenant Colonel Joseph Doty, the definition of leadership consists of three main components. The first concerns the leader serving

as an ethical example to subordinates, who constantly observe their actions and decisions. The second involves the leader's ability to communicate the relevance of ethical issues and the norms demanded by military conduct. Lastly, the third component is the creation of ethical command environments, which allow for the successful achievement of desired objectives (Barnes & Doty, 2010, p.90-91).

"Ethical leadership is a two-way process. Ethical leaders must direct attention to ethical issues, enforce ethical standards, and allow subordinates to bring up ethical issues with them. Rewards and punishments should take place in an environment of open two-way communication. Subordinates must inform their leaders about ethical issues they may face (that the leader is unaware of), and ethical leaders must clearly inform followers of ethical standards." (Barnes & Doty, 2010, p.90-91).

In the various studies on leadership, several types of leadership are identified depending on the environment and the military context. One of the most common and important is "Leadership command" (Soares, 2023, p.10), which centres on raising awareness of the mission and its objectives to ensure its success (Soares, 2023, p.10). This stage of leadership corresponds to a more individual domain, which is also fundamental within the military sphere, contributing to the preparation for potential unpredictable situations.

The role of the military leader carries a strong individual connotation, whereby the person in charge must demonstrate psychological preparedness that is as strong—or even stronger—than their physical preparedness (Rosinha & Matias, 2025, p. 126). This is due to the demand for psychological resources (Gazapo, 2015, p. 188). The ongoing use of these resources in training, simulations, and missions leads to a growing focus on the psychological dimension of the leader. Psychological competence is a critical component of military leadership in the 21st century. More than simply serving

as preparatory support for war, it constitutes a fundamental pillar, becoming known as Psychological Warfare

Psychological Military Warfare is intrinsically linked to military leadership, both rely on the ability to influence the behaviour and perceptions of subordinates and the enemy through psychological actions and operations. These are used to motivate, inspire, and boost the morale of troops, whether in times of peace or war. In contrast, when directed at the enemy, the goal is to destabilise and demoralise. Broadly speaking, Psychological Warfare is also tied to a strategic communication approach (Cohen & Bar'el, 2017, p.15).

In a war context, the landscape is always complex and extremely intense, where violence becomes the first response. This introduces a psychological component within military sciences, explaining the phenomenon as an impulse—a biological reflex that places man in a counterattack position, driven by emotions such as fear, which the leader must manage with exceptional skill (Mattoso, et al., 2022).

The psychological game embedded in this war strategy elevates the phenomenon beyond traditional violence associated with physical and armed combat, beyond the calculations of a bullet's speed and accuracy or the planning of a strategy that positions army units at key points on the battlefield— According to researcher Nuño Rodríguez, Psychological Warfare carries a strong political component, which is particularly evident using propaganda. (Rodríguez, 2020, p. 90).

Psychological warfare becomes a weapon as powerful as those mentioned previously, possessing something as destructive as a firearm – the word or the phrase. Boris Pasternak once said that a phrase holds tremendous power – "the power of the glittering phrase" (Thompson, 2000, p. 9). The communication elements in psychological warfare simultaneously induce information warfare, through psychological operations conveyed via information technologies and traditional dissemination techniques such

as propaganda. These psychological operations – “a set of techniques used to influence the emotions, behaviours, and perceptions of individuals, groups, or even nations” (Cátedra, 2024) – do not necessarily take place during times of war. They are frequently used in peacetime with various targets – both military and civilian populations (Cohen & Bar’el, 2017, p. 16) – to persuade, manipulate, demoralise, and influence public opinion. This process of manipulating civilian populations is known as the “winning of hearts” and is one of the oldest strategies in Psychological Warfare. It is essential to clarify that psychological warfare and psychological operations/actions are not the same, although they are intrinsically linked:

“Psychological action is the use of a set of resources and techniques to generate emotions, attitudes, predispositions, and behaviours in individuals or groups that are favourable to the attainment of a desired outcome. Psychological warfare is characterised by the planned use of propaganda and its combination with other actions, with the aim of influencing the opinions, emotions, attitudes, and behaviours of opposing or neutral groups in order to support the achievement of national objectives» (Silva, 2007, p 259).

Psychological actions are primarily carried out through propaganda, which is “persuasion by non-violent means” (Silva, 2007, p 259), where the dissemination of information aimed at neutralising the enemy is executed via traditional and/or digital media platforms (television, radio, newspapers, social media, among others), as well as leaflets and posters, most of which are distributed by air forces in enemy-controlled zones (Cátedra, 2024).

Defining propaganda is a complex task, as it is an abstract concept. However, academic research offers several definitions, such as Harold Lasswell’s, who described propaganda as “the management of collective attitudes by the manipulation of significant symbols” (Thompson, 2000, p.15). Leonard Doob defined it as “a

systematic attempt by one or more individuals to influence the attitudes of an audience through the use of suggestion, thereby controlling their behaviour” (Thompson, 2000, p.15). In 1937, the Institute for Propaganda Analysis defined it as “the expression of opinions or actions by individuals or groups deliberately designed to influence the opinions or actions of other individuals or groups with reference to predetermined ends” (Thompson, 2000, p.15-16). In this context, Doob’s definition may be the most appropriate, given the characteristics of propaganda in psychological warfare.

Nevertheless, propaganda is not the only component of psychological warfare. Disinformation, cyberattacks, and emotional manipulation are also central elements. In an increasingly digital and technological world, psychological operations are often supported by these platforms, assisting the military leader in identifying “strategic decision-makers” (Silva, 2007, p. 259) so that the mission’s objective can be successfully achieved.

The war phenomenon now requires components that go beyond military science alone. It becomes an interdisciplinary field involving psychology, sociology, philosophy, history, communication, and military sciences. Only by integrating these disciplines can one fully study the war phenomenon and its transformations, and in doing so, provide the leader with the knowledge needed to act effectively.

3. PSYCHOLOGICAL WARFARE AND THE CONDUCT OF WAR

The war violence that the 20th century brought about the necessity to regulate the conduct of war by imposing ethical and moral limits through laws and norms aimed at preventing the abuse of power during military actions. Psychological Warfare (PW) is framed within a specific context in International Treaties and Conventions; however, none of the defined norms explicitly address the practice of PW. Therefore, a careful interpretation of these norms is required to highlight violations of this type of warfare

according to the established rules of war. By “rules of war”, we refer to a series of laws and norms developed throughout the 19th and 20th centuries—primarily in the aftermath of the Second World War and with the onset of the Cold War. The United Nations is one of the most significant bodies in this regard. With a mandate centred on peacekeeping and conflict mediation through diplomacy as a primary strategic approach, and the use of force only as a last resort—requiring authorisation from the Security Council (Charter of the United Nations 1945, p. 29) — it seeks to regulate and limit armed conflict.

“Art. 44 – When the Security Council has decided to use force, it shall, before calling upon a Member not represented on it to provide armed forces in fulfilment of the obligations assumed under Article 43, invite that Member, if the Member so desires, to participate in the decisions of the Security Council concerning the employment of contingents of that Member’s armed forces.”. (Charter of the United Nations 1945, p. 29)

In addition, the UN works in conjunction with the Geneva Conventions and their Additional Protocols to ensure that international armed conflict unfolds within a more humanitarian framework—especially in a world where the use of weapons of mass destruction, such as chemical, nuclear, and biological weapons, has become something natural.

In this era of technological and scientific advancement, the threat of cyberattacks represents a new front of warfare, necessitating a redefinition of the rules and limits of armed conflict. Parallel to these developments, we witness the rise of asymmetric conflicts such as terrorism and psychological warfare, both of which raise recurring moral and ethical questions, as previously discussed.

In Psychological Warfare, as previously analysed, we are dealing with a psychological game in which disinformation techniques may come into conflict with the standards

established by the Geneva Conventions, which prohibit methods that dehumanise civilian populations. The use of disinformation can create an atmosphere of violence that risks breaching the principle of proportionality, which, according to International Humanitarian Law (IHL), prohibits causing disproportionate collateral damage to civilian populations through military actions.

The boundary between influence and abuse manipulation is narrow, and the challenge is in identify psychological means that can be employed without violating human rights. Psychological warfare must be regulated by clear ethical and legal principles, it is ethical justified when used to reduce violence or to minimise human losses, however when it is employed to cause unnecessary suffering it cross the legal limits.

Ongoing psychological manipulation may be regarded as a form of psychological terror. It is considered morally questionable within the boundaries of warfare and potentially constitutes a violation of the right to human dignity.

War is a phenomenon that cannot be dissociated from Man and his behaviour, and for this reason, it is crucial that we know how to study and interpret it, developing new strategies and tactics that allow us to mitigate the consequences of acts of violence—most of which are extreme. In other words, it is essential to ensure that ethical boundaries are not crossed, regardless of whether the war is waged on a physical battlefield or in the digital realm.

4. CONCLUSION

Military leadership and psychological warfare in contemporary war contexts cannot be separated, as psychological warfare is essential for the success of leadership and the achievement of objectives during times of war.

A military leader bears the responsibility for human lives and must therefore possess the ability to act and adapt in hostile environments, without ever neglecting the social

dimension. The use of psychological strategies by such individuals goes far beyond traditional combat tactics, enemy demoralisation or boosting the morale of subordinates; through the manipulation and control of information, a military leader can construct an environment that is strategically advantageous in achieving their objectives.

A leader must be able to balance strength and intelligence, while maintaining a conscious understanding of the consequences of psychological warfare when making decisions, as the success of a war is undoubtedly linked to psychological warfare and its strategic use—always bearing in mind the power a single word can hold on to the battlefield.

The new dimension of military leadership challenges the norm established by the classical western literature on art of war, as previously mentioned. Today, war is no longer a merely continuation of politics. It is a phenomenon that is deeply connected to all domains of the human condition and the environment in which it takes place, including culture, society, psychology, among others. Modern warfare must adhere to the conduct imposed by a legal system that limits the excessive of force – an extended consideration that military leaders must constantly bear in mind.

In a globalised world without borders, where the internet serves as the primary pastime for nearly everyone, information is easily manipulated, and techniques of psychological dissemination and action are highly visible in military contexts. Nevertheless, this weapon is often regarded as harmless, revealing a significant gap in current legislation concerning the regulation and standardisation of war crimes, given that it can inflict consequences as profound as those of physical confrontation.

In this regard, it is necessary to reflect on why such actions are not considered dangerous weapons in armed conflicts, and to what extent, in a borderless, globalised

world where information flows freely, we are all potential targets of psychological operations—even when not directly involved in military conflicts.

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THE INTERNATIONAL LAW OF ARMED CONFLICT: A VITAL COMPONENT IN THE CONTEXT OF CHANGING WORLD ORDER

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ABSTRACT

Armed conflicts pose significant challenges to law principles, often leading to irrational behaviours that undermine strategic objectives. In today's world, these conflicts' visibility and selective legitimisation skew our understanding of the fundamental realities of space, time, and warfare. This article examines and reflects on the relationship between these conflicts and international law, employing a critical analysis and polemologic reflection, particularly considering the transformation of international relations influenced by a diverse array of actors and domains. The goal is to analyse the actions of the involved parties within the context of armed conflict, focusing on their accountability to the human community in what is often regarded as an exceptional circumstance. This scenario necessitates adherence to International Humanitarian Law, particularly considering unregulated interventions driven by strategic and political agendas. Consequently, the inherent humanism of cosmopolitan identification, tailored to the specific realities of those in conflict and other stakeholders, serves as a foundation for more substantial binding agreements for all parties involved.

Keywords: Armed conflicts, international humanitarian law, multipolarity, international actors.

1. INTRODUCTION

In the context of a changing world order, this article aims to explain the importance of promoting respect for International Humanitarian Law (IHL) by all parties in conflict situations, ensuring the coherence of humanitarian values that objectively protect non-combatants and limit the use of military means. Non-combatants are often the most affected by conflicts. In these situations, women, children, people with disabilities, and the elderly suffer the most and are the most vulnerable. The exercise of violence, or use of force, is governed by the United Nations Charter, with two exceptions: in cases of self-defence against an armed attack and in situations where the United Nations Security Council authorises it. However, IHL does not address the legitimacy of armed conflict but seeks to regulate the conduct of the parties involved. Thus, in conflict situations, in a dichotomy between reason and irrational violence, reason must prevail, even if it consists of the use of force.

International and national organisations, as well as other civil society organisations, play a fundamental role in identifying and implementing strategies to promote humanist values in situations of armed conflict. Society and organisations are people, each of whom contributes to the ethical construction of a just society that respects the dignity of the human person. It is up to leaders to make the internal and external arguments, to be the rational and fair conciliator, and to build a humanist society. Leadership is central to changing stereotypes that condition respect for others as human beings, diversity, and the importance of protecting those most affected in conflict situations. This work aims to conduct an empirical analysis through documentary analysis to find ways of guiding possible reasons in the context of conflict in the face of growing multipolarity.

In the first chapter, we discuss theology and perspectives of the sociology of war as a basis for understanding this work. In the second chapter, we study the importance of

regulating war, describing elements of its historical course and its coincidences with humanism in war, the just war; we address the origins and development of humanism in war presented as IHL. In the third chapter, we reflect on the subjectivity of international relations, which conceives a concept of multilateralism and diversity of actors in a changing global context. The fourth chapter questions the effective accountability of IHL and the practical challenges of protection under IHL in current conflicts. We conclude the discussion in the fifth chapter by briefly reflecting on the context of the challenges of armed conflicts today and prospective considerations regarding the law of armed conflicts.

2. METHODOLOGY

This article aims to take a critical and constructivist approach, recognise the norms established in the conduct of international and non-international armed conflicts, and challenge the state-centric conception in the context of a new world order, using international law as a regulator in interstate and intrastate affairs relations. The study uses the qualitative method based on an analysis of the literature, supported by Gaston Bouthoul's polemological reflection and Bertrand Badie's critical analysis. The analysis occurs in the context of the transformation of international relations, where states and non-state actors interact in the construction of the present, and the future and the dynamics of subordination and domination particularised in political and strategic intervention.

This study primarily seeks to reflect on the respect for IHL by all parties involved in a conflict. To this end, the sources of international law regulation in conflict situations seek to bind and hold accountable the actors involved in the armed conflict in a changing global context that necessarily adapts according to secular civilisational principles. In this context, the actors must adjust to the different realities and find

consensual and will-generating forms of international regulation, ultimately in the expectation of reciprocity. Violent imitation implies reciprocal action and the mimetic principle in conflicts, which causes adversaries to become increasingly similar (Girard, 2007, p. 20). On the other hand, reciprocity expectations exist concerning respect for IHL and a fundamental regard for humanitarian principles. This hinders the unregulated use of force by the various parties in conflict, despite their power dynamics.

It is considered that the applicability of IHL results from the commitment of states, international organisations, and other actors to a relationship of interdependence, seeking the protection of non-combatants and the limited use of military means. Thus, the necessity of adopting and adapting IHL for a globalising normative purpose for effective accountability is questioned. The assumptions of cultural domination based on social, cultural and economic values that condition equality are examined in contrast to the indispensable change in objectives and discourses. Finally, the aim is to highlight the individual as the centre of constructing structures and society in a historical change context. The objective is also to find ways of facilitating the practical commitment of the actors in an alternative to the state-centred approach in transforming social and power relations that embrace common values in a project adapted to a new reality.

3. THE POLEMOLOGY APPROACH: PERSPECTIVES FROM THE SOCIOLOGY OF WAR

As we progress through history, from the dawn of humanity, we encounter war as a constant of human existence, which can be categorised into four phases: the animal phase, primitive man, civilised man, and man utilising modern technology (Brito, 2024, p. 34).

It is recognised that war is part of human history and profoundly alters society's socio-political environment (Brito, 2024, p. 8). Despite the cruel nature and brutality of armed conflicts and the transformations this phenomenon entails, the approach to peace studies deserves primacy. From another perspective, the reasons for war's irrationality, as the antithesis of peace, should be studied as a utopian pursuit of its end or as a way of promoting the possible rationalisation of armed conflict.

The psychoanalytical study of the drive for life and death - Eros and Thanatos - and the intersubjective effects related to the behaviour of the individual, the organised group or a community relates to the perspective of each human being, whether civilian or military. In the history of humanity, the theological doctrines of monotheism stand out for legitimising war against non-believers (Bouthoul, 1971, p. 12). In this way, war has been the vehicle through which hegemonies, during a specific period, have imposed a model of society that prevails over humanity (Bouthoul, 1971, p. 5).

Gaston Bouthoul discusses wars as a recurring periodic biological phenomenon and a biographical milestone in people's history (Cano, 2019, p. 265). Politics, border changes and battles are thus periodic events, as are many others (Cano, 2019, p. 393). War is characterised by its power of contagion, including its preparation. Bouthoul, drawing on Gabriel Tarde, says that if one tribe arms itself, the others will follow suit for fear of being exterminated or sacrificed (Brito, 2024, p. 11). When a violent confrontation takes place, the means at their disposal are used to impose their will on the adversary.

Bouthoul relates the sociological, political, and psychological dimensions of war, as well as the sociological impact on different societies, specifically in terms of the consolidation of power, the resolution of political disputes, and the preservation of the status quo. It explores how various social contexts and political structures lead to conflicts. It analyses wars as the result of social paradoxes, including economics,

politics and ideology, which are motivated by the interests of states. Thus, he argues that war must be studied scientifically so that it can be regulated by international law (Bouthoul, 1971, p. 8).

Throughout history, war has had a tremendous global influence. Rome's successes, in addition to its politics, were mainly due to its military organisation. Rome granted citizenship to a large proportion of the inhabitants of the conquered nations. Thus, despite heavy casualties, they continued to maintain recruitment (Mosca & Bouthoul, 1968, p. 45). Athens differs from Rome in the exclusivity of citizenship granted in exceptional cases, which conferred political rights upon citizens. With its origins in the 15th century, mercenaries, whether in the service of one state or another, proved to be a dangerous instrument for the contracting governments. In addition to being unreliable, it artificially prolonged wars for its benefit (Mosca & Bouthoul, 1968, p. 74). Machiavelli develops the concept of militias in his *Art of War* (Mosca & Bouthoul, 1968, p. 89). Hobbes writes about the intellectual origins of the English Civil War, in which education was based on the idea of political freedom (Mosca & Bouthoul, 1968, p. 140). Politicians are aware of the conditions of human corruption of the natural passion of human beings: "In the state of nature, right extends as far as force, and everyone has the right to everything, without limitations" (Mosca & Bouthoul, 1968, p. 142). On the other hand, Spinoza, seeming to follow Hobbes, comes to different conclusions and argues that reason shows humanity the usefulness of society and that peace should prevail over war and love over hatred (Mosca & Bouthoul, 1968, p. 142). The development of weapons, tactics and recruitment methods strongly influenced the political structure of states. For example, in the 6th century BC, the democratic transformation of the Greek polis was influenced by the military capacity of the infantry associated with the hoplites, who were recruited from the middle classes, as opposed to the aristocratic cavalry par excellence. The recruitment of the legions by

Rome, the hegemony of the monarchy over feudalism, the perfecting of firearms at the end of the Middle Ages and compulsory military service by male citizens in the 19th and 20th centuries defined the evolution of warfare (Mosca & Bouthoul, 1968, p. 206). War, threat and preparation become reactive elements in imitation of states (Mosca & Bouthoul, 1968, p. 238). From a psychological perspective, there is a general tendency towards violence, demonstrated in the two World Wars, the Russian, Chinese and Spanish civil wars. Executions, justified by political differences, which were banned from legislation at the end of the 19th century, are once again seen as practices materialised in murder and political genocide (Mosca & Bouthoul, 1968, pp. 241-242). The outbreak of the First World War marked the end of 19th-century humanitarianism. The Covenant of the League of Nations, signed in 1920, was also based on generous and liberal humanitarian ideas. However, it ended in the following decade with the rise of nationalism that led to the Second World War. We could have believed that wars had already calloused humanity, yet the chain cycle of endless revenge and atonement continued to worsen.

We could also think of the justification of irrational impulses resulting from thoughtful politics, where victory remains the irreducible criterion of truth. Religious fanaticism coexists with political fanaticism and nationalism (Mosca & Bouthoul, 1968, p. 244). Even so, war remains unexplainable by historians because, as well as being a historical fact, it is a sociological one that is repeated for reasons that differ from the apparent motives (Mosca & Bouthoul, 1968, p. 249). Take the example of the American states, which were the principal authors of the Covenant of the League of Nations but were also the ones that erected barriers to European emigration and severe protectionist customs tariffs (Mosca & Bouthoul, 1968, p. 254). In this context, relations between nations are always thought of from the perspective of war, past, present or future, and

nationalism seems to represent the instinct of modern state politics (Mosca & Bouthoul, 1968, p. 255).

Additionally, from a feminist perspective, we could argue that the cruelty of a society is linked to the lesser importance placed on women within that society. This represents social regression, referencing Michelle Obama's speech on 13 October 2016 at Southern New Hampshire University: "the measure of any society is how it treats its women and girls." Nevertheless, other perspectives suggest that women, as the Nazis put it, choose "cannons over butter" and that the time for hecatomb and destruction is near. "Because women do not love war or austerity. They need to be silenced to unleash the forces of destruction." (Bouthoul, 1971, p. 297). On the other hand, we can refer to Viking women as exemplars of equal societal roles, even as wartime leaders (Bergqvist, 2024).

From the perspective of considering war, we find various references throughout history. Confucius says that a great general does not love war, is not vengeful, or passionate (Bouthoul, 1971, p. 14). From Sun Tsu's perspective, in the 5th century BC, war is a vital instrument of the state. However, he subordinates the idea of war to the art of subjugating the adversary without combat. Plato refers to war as a relationship of enmity by nature in his reference to barbarians and Greeks, and Aristotle as a condition of normal life in the defence of the polis. Thucydides refers to the imbalance of power as the cause of wars. In the Middle Ages, St Augustine defended the conduct of wars with a view to peace. St Thomas Aquinas understood the illegitimacy of war except in defence of the weakest and of the Republic against its enemies. For his part, Machiavelli advocates the purpose of war in realising political objectives such as the expansion of territory and culture or the security and stability of the state (Brito, 2024, p. 39). In the same vein, Clausewitz argued that war is not an end but a way of achieving a strategic objective outlined by political objectives. He argued that war

corresponds to politics' purposes and that politics adapts to the means available (Brito, 2024, pp. 40-50).

In short, throughout history, war has consistently taken different approaches adapted to the time and context. Today's conflicts are characterised by totality and asymmetry. However, the regulation of war has evolved over the last few centuries, particularly since the mid-19th century. Concerning the protection and regulation of the means and methods used in conflict, the law of The Hague and the law of Geneva, areas of International Humanitarian Law, aim to regulate behaviour in conflict. They are based on the Rousseauian model of the conception of war. According to Rousseau, civilians must be protected at all costs. The Social Contract describes war as a relationship between states in which the enemies are the soldiers, not the individuals (Clapham & Gaeta, 2014, p. 90). However, we are witnessing the total wars Clausewitz theorised, in which the distinction between military and civilian is blurred, demanding commitment to humanitarian law.

4. ORIGINS AND DEVELOPMENT OF HUMANISM IN WAR: INTERNATIONAL HUMANITARIAN LAW

In 1859, three centuries later, a Swiss banker, Henry Dunant, encountered the dead and wounded in the Battle of Solferino on 24 June 1859, during the Second Italian War of Independence, and tended to the injured and dying. Three years later, in 1862, Dunant wrote a small book, "Un Souvenir de Solferino," published by Henry Dunant at his own expense 1862. The book originated at the first Geneva Convention in 1864, and with the establishment of the International Committee of the Red Cross, along with the National Red Cross Societies, and later the Red Cross Crescent. With only 1600 copies, it described the terrible suffering of the battle survivors. He proposed the idea of an international convention to care for the wounded in combat in all European states. In

this way, a permanent voluntary organisation was created to care for the victims of war. The National Red Cross Societies were created in 1863, and the International Committee of the Red Cross (ICRC) the following year. In the same year, 1864, the first Geneva Convention on the Amelioration of the Condition of the Military Wounded and Sick on the Field of Battle was signed.

Significant advances were made in the field of IHL in the 19th century, but the justifications for the call for IHL, both now and then, were subject to the interests of states. Thus, large states aim to fulfil their specific interests and use IHL as a justification, conditional on the interests of their objectives, which contradict the spirit of the law. Examples can include the US invasion of Iraq in 2003 and the Russian invasion of Ukraine in 2022. Small states, worried about being defeated and occupied, seek to protect their population and territory (Andrew & Gaeta, 2014, p. 89). IHL is a legal framework that covers the humanitarian aspects of protection in the context of armed conflict and the rules of armed conflict. The Law of Armed Conflict is centred on the conduct of war.

From a normative perspective, IHL was established by Conventions that historically set legal-normative foundations. The Code of Hammurabi, as noted by Robert Francis Harper (1904), about 2250 B.C., "to cause justice to prevail in the land, to destroy the wicked and evil, to prevent the strong from oppressing the weak." Referring to the Lieber Code, many authors regard 1863 as the first attempt to codify the law of war. Although it is only binding in the United States, it aligns with the laws and customs of war of the time. According to the International Committee of the Red Cross, the Geneva Convention was prepared during the American Civil War by Francis Lieber, a professor in New York, revised by a council of officers, and promulgated by President Lincoln. The "Lieber Instructions" influenced the codification of the laws of war and the adoption of similar regulations by other states. They originated the project for an

international convention on the laws of war at the Brussels Conference in 1874 and inspired the adoption of the Hague Conventions.

Additionally, the Lieber Code enshrined the principles of necessity and proportionality, two fundamental principles of IHL (Brito, 2023, p. 483). While not legally binding, the Declaration of St. Petersburg of 1868 was acknowledged by the fifteen signatory countries. The Declaration was Tsar Alexander's initiative and was never ratified. However, it was decisive for the approval of the Hague Conventions that followed in this area (Vale Pereira, 2014, p. 33). It is crucial to note that the Declaration of St. Petersburg restricts the use of weapons of war that may cause unnecessary suffering, and the Declaration of Brussels of 1874 enshrines the customs of war in the first modern codification (Brito, 2023, pp. 480-481).

IHL is divided into Hague Law and Geneva Law. The former refers to the rules concerning the conduct of war, including the means and methods of warfare, the conduct of hostilities, and occupation. The latter aspects are primarily related to protection. In addition, the New York Law is so-called because it refers to actions aimed at protecting human rights during armed conflict, developed under the auspices of the United Nations (UN) and within the framework of Humanitarian Law. Regarding Hague law, the First Hague Peace Conference of 1899 sought to revise the Declaration on the Laws and Customs of War at the Brussels Conference, adopting the so-called II Convention on the Laws and Customs of War on Land and the annexed regulations. The first Hague Declaration took place on 29 July 1899: "Declaration (IV, 1), to Prohibit, for the Term of Five Years, the Launching of Projectiles and Explosives from Balloons, and Other Methods of Similar Nature. The Hague, 29 July 1899." (Brito, 2023, p. 480). New conventions were adopted at the Second Hague Peace Conference in 1907ⁱ, including the Third Convention on the Opening of Hostilities, which forces a declaration of war, the Fourth Convention on the Laws and Customs of

War on Land and its Annexe and the Fifth Hague Convention on the Rights and Duties of Neutral Powers and Persons in Case of War on Land. In 1925, the Geneva Protocol on the Prohibition of the Use in War of Asphyxiating Gases, Poison and Other Gases and Bacteriological Methods of Warfare was adoptedⁱⁱ.

Regarding Geneva Law, the first Geneva Convention on the Amelioration of the Condition of the Military Wounded and Sick on the Field of Battle was signed in 1864. In 1906, the Geneva Convention updated the 1864 Convention for the same purpose, providing more detail and employing more precise terminology. New provisions regarding the burial of the dead and the transmission of information were included, voluntary aid societies were recognised, unworkable provisions were discarded, and the obligation to repatriate unfit wounded was revised to a recommendation. It was later replaced by the 1929 Convention, which relates to the Treatment of Prisoners of War, and updated the first Convention relative to the Wounded and Sick on the Field of Battle, representing the third version of the Geneva Convention, following those of 1864 and 1906. It was replaced by the 1949 Geneva Convention (I). In 1949, the four Geneva Conventions were signedⁱⁱⁱ and are in place. The two Additional Protocols of 1977, signed on 12 December, for the Protection of Victims of International and Non-International Armed Conflicts, update and clarify the four Geneva Conventions of 1949 (Andrew & Gaeta, 2014, p. 88).

The Martens clause, an essential instrument of IHL, was first introduced in the preamble to the 1899 Hague Convention to emphasise the importance of protecting people affected by conflict. Consequently, the parties' conduct in conflict continues to be regulated by legal principles. The clause is now a customary rule adopted by other IHL legal instruments, namely the Geneva Conventions I-IV and the Additional Protocols I and II. Concerning the normative structure and positive and negative obligations, the Hague law is built on prohibitions, while the Geneva law is mainly

based on obligations. He considers that the degree of openness of Hague law to Jus Ad Bellum considerations is greater than that of Geneva law, which contains the main humanitarian rules.

Hague law is part of the law of principles, while Geneva law is a law of rules. It explains the tendency to prosecute war crimes using the Geneva Law rather than the Hague Law. With the Additional Protocols to the Geneva Conventions of 1949, which codified conduct in international and non-international armed conflicts, the dichotomy between Hague and Geneva law lost significance, uniting them (ICRC, 2025). On the other hand, Robert Kolb (2023) argues that, although distinct, the two branches of law have never been entirely separate, adopting different and subjective approaches in a changing context. Concerning the normative structure and positive and negative obligations, Hague law is built on prohibitions, while Geneva law is primarily based on obligations. Considering that the degree of openness of Hague law to Jus Ad Bellum considerations is greater than that of Geneva law, which contains the main humanitarian rules (Kolb, 2023).

5. CURRENT AFFAIRS AND THE SUBJECTIVITY OF INTERNATIONAL RELATIONS: CHALLENGING TIMES

We live in times of transformation, in which understanding different perspectives allows us to distance ourselves from the subjectivity and misunderstandings that catalyse belligerence. "Knowing and recognising the Other" makes it possible to achieve humanity (Badie, 2023, p. 9).

The present prejudice of the past and the tendency to be comfortable in the future haunt the essence of true humanism. The biased and modulating sources of interest networks shape objectivity and condition, for better or worse, the perception of reality. We live in complex times. Conflicts such as the one in Eastern Europe have different readings,

which are subjective and interconnected with the reality of the past, the present, and the interests of what is to come. Decisive and random arbitrariness is conditioned by the individual's decision, the more or less informed collective conscience, and the interested interpretation of each individual (Badie, 2023, p.12).

The European hegemon experienced a community of religion and culture; the princes were cousins, and the quarrels were conducted with mutual respect, perhaps because they were identical; the strategy shared the same rules. Today, international relations require excellent knowledge and understanding to decode the players in a complex multipolar world. Models are adopted according to political contextual interests. Political-military rationality is replaced by the overlapping of economic, social, technological, and religious rationality, which are used interchangeably and are more difficult to understand (Badie, 2023, pp. 16-17).

In this context, faced with the most complex situations in human life, life and death seem to oscillate between dependence on organised random irrationality and regulation towards possible rationalisation. This rationalisation depends on the principles of distinction, proportionality and precaution in the conduct of hostilities. In this sense, IHL is an essential and complex part of public international law and international relations. In this context, war aggregates the humanitarian, social, political, and legal crises that the international community faces in today's conflicts (Garcia, 2023, pp. 16-19).

The search for respect in the individual, community, national, and regional dimensions of identity has gained relevance in the face of the need for understanding in international relations in an interdependent world, and simultaneously, in a competitive context from a multipolar perspective. Thus, social interaction gains importance and symbolism in globalisation when it seeks a common denominator in the codification of humanity (Badie, 2023, p. 26). It builds and influences the various

domains under the possibility of antagonisms and pursues alternative models. The fragility of new international relations highlights the four most essential tensions that jeopardise the international order: the lack of recognition of the perspective of the other, resulting from the distinct perception of contexts; diplomacies carried out according to codes that tend to be more diverse; and the "crisis of power" that randomly creates unexpected and specific meanings (Badie, 2023, p. 30). Thus, understanding the subjectivity of the actors' rational, cultural, and sentimental dynamics is key to comprehending the particularities and diversity of human activity, which transcends traditional international politics and requires openness to different views and approaches.

An example Bertrand Badie raises highlights dissonances in the perception of the same events, creating different representations of the contexts. Regarding colonial history, the Global South reconstructs the Russian-Ukrainian context differently from the West. For the West, this conflict was a series of events that jeopardised the territorial integrity of a European state. For the Global South, it was a conflict that, once again, aggravated the human security of the poorest and maintained the status of "double standards" in analogy to Israel's annexation of the Palestinian territories, as well as other similar situations that have occurred throughout history (Badie, 2023, pp. 90-91).

5.1 MULTILATERALISM AND DIVERSITY OF PLAYERS: THE GLOBALISING CONTEXT

In today's globalised world, reality is characterised by asymmetrical power relations, as evidenced by armed conflicts. In this reality, state forces, irregular forces, mercenaries, warlords, private security companies, terrorists, and criminal groups, among others, share space. The dimension of cyberspace and considerations of the human, cultural, ethnic, and religious dimensions add to the complexity (Garcia, 2023,

pp. 52-53). Added to this is the influence of industrial and financial groups and private companies seeking market control, implying a significant proportional reduction in public actors. The social, political, geographical and cultural context determines conflict development and takes precedence over using more sophisticated weaponry (Garcia, 2023, p. 54), under the principle of the responsibility to protect (R2P).

Using terrorism as an example, we cannot help but distance ourselves from the classic approaches, which state that state and national solutions are ill-suited. Instead, we propose a global language based on customs and shared values that considers the overlap between human and social insecurity, the dismantling of institutions, multiple actors of violence and their privatisation, criminal groups, and community movements (Badie, 2023, p.68). Time and again, there is a lack of institutions that can guarantee, within the complexities, both neutrality and the defence of humanist values and that can decisively influence the course of history. We are therefore looking for the ability to foster consensus based on the "common denominator", reaffirming humanism in a world that, whether we like it or not, is globalised in the most diverse social, economic and political fields. The "subjective reconstruction of concepts" is essential, considering each actor's reading of the contexts and fundamentally a critical perspective of conceptions (Badie, 2023, p.109).

We live in a world characterised by diverse actors, which can be counted by the number of living humans, each with a perspective. Consequently, the rationalisation of subjectivity is a factor that enhances globalisation and human coexistence. In this way, information, which is now easier to access, must be brought to individuals and communities to adapt it to different contexts. The broadening of the players involved in the conflict management process in the face of complexity is necessary, but the question of whom to include and exclude remains. While broad inclusion is more representative, consensus is more complicated.

Multilateralism has accentuated complexity but has not been free of national interests. International social interaction seeks people beyond structures. According to Bertrand Badie, it looks for "subjective parameters" in the battle of the senses, such as humiliation, fear, resentment, and the inversion of values (Badie, 2023, p.124). On the contrary, it can look for a path to positive peace through the fundamentally impartial perception of humanist values.

Similarly, in the international game, different time parameters and genetic mechanisms limit the action of structures and individuals (Badie, 2023, p.124). Conflicts will not disappear but rely on globalisation, which coexists with economic, social, climate, and health challenges. Reconciling this complexity, which adds different speeds, and directing it towards the valorisation of humanism increases the chances of success for the appropriation and consequent binding of IHL.

5.2 INTERNATIONAL HUMANITARIAN LAW: EFFECTIVE ACCOUNTABILITY

Kant defended legal globalism as the idea of "cosmopolitan law", the foundation of the perennial universality of peace. These ideas are well presented in Norberto Bobbio and Habermas's thinking. Since armed conflicts are situations regulated by IHL, the concept of sovereignty as opposed to cosmopolitanism must be blurred with the strengthening of international institutions and the globalising legal order (Zolo, 2011, p. 24). Hans Kelsen advocates world federalism, and Norberto Bobbio a World State, situations in which the legal unification of peoples would be the foundation of pacifism (Zolo, 2011, p. 24). We are still far from this goal, but as Habermas advocates, one way forward is to give the United Nations greater power to guarantee adequate protection of human rights (Zolo, 2011, p. 28). To establish a cosmopolitan and peaceful order, it appears necessary to equip the United Nations with military and

police capabilities as well as shared institutions. This would enable it to legally regulate relations within the "fragile Westphalian system of equilibrium between states" and enforce the rules defined by force (Zolo, 2011, p. 28), thereby constituting it as the supreme supranational entity, with adequate reforms to ensure it remains aligned with the current global context. On the evolutionary path towards this goal, which is characterised by winding and zigzagging, with advances and setbacks, it is necessary to commit those involved in conflicts to complying with the rules of IHL as minimum standards applicable to all armed conflicts in all circumstances.

According to the 1969 Vienna Convention on the Law of Treaties, an *ius cogens* norm is accepted and recognised by the international community of states as a norm that does not admit its opposite. It can only be modified by a subsequent norm of general international law with the same character. IHL and IHRL are based on humanity and respect for human dignity in all circumstances and have in common rights that cannot be suspended, including the right to life, freedom of thought, the prohibition of torture, cruel, inhuman and degrading treatment, the prohibition of slavery and forced labour and the principle of criminal legality Jiménez García, 2023, pp. 128–130).

IHL thus applies in situations of exception within a period limited to the beginning and end of an armed conflict. In between, death, damage to persons and property, and criminally punishable restrictions on freedom are legalised in peace. Collateral damage and the deprivation of rights for individuals and civilian populations exposed to the violence of armed conflict are accepted (Farley & Pradhan, 2024). While the definition of the beginning of an armed conflict, which implies the exceptionality and applicability of IHL, seems more straightforward, the end of this state presents different perspectives due to the permission to use violence, which varies between IHL and a state's domestic law. Thus, the definition and clarification of the end of a conflict relate to the cessation of hostilities concerning the intensity of violence or the

organisation of a party to the conflict, the termination of armed conflict, the peaceful resolution between the parties, or the likelihood of confrontations not resuming. Moreover, the definition of the end of hostilities should consider the reduction of hostilities below the threshold for the existence of armed conflict as defined by the Reverse Tadic test, the quality of peacemaking—including objectives consistent with IHL—and the interval between the cessation of violence and the commencement of peacemaking (Farley & Pradhan, 2024). Furthermore, the increase in non-state armed conflicts and the growing capacity of non-state actors necessitate a clear definition of the end of hostilities. This definition is critical when states regard non-state actors as terrorists. Eternal wars can be limited by adopting mechanisms that restrict the state's discretionary power, legitimise the parties involved, and bring international human rights law closer to domestic law, thereby alleviating the suffering of populations residing in the same space (Farley & Pradhan, 2024). We cannot fail to mention the United Nations' role in multidimensional and multilevel missions (Farley & Pradhan, 2024). These missions consist of intervention operations in ongoing, temporary armed conflicts, in defence of government entities or transitional situations. These missions are mainly focused on disarmament, demobilisation, reintegration and reconstruction of the armed forces, strengthening the rule of law and justice, the women, peace and security and equality agenda, supporting the implementation of complex peace agreements, collaborating with the functioning of international criminal courts, military and police reorganisation, stabilisation, protection of heritage and cultural diversity, protection of natural resources and environmental considerations, as well as sanctions against terrorist groups (Garcia, 2023, p.46). It is an international humanist mission to ensure a secure and stable environment that fosters peace and development in the intervening state. This mission must be exemplary, going beyond state interests and promoting international IHL.

6. THE UNFULFILLED PRESENT AND PROSPECTS OF ARMED CONFLICT LAW

The evolution of the nature and technology of war almost always involves speculation about the future. Generalisations represent a problematic approach to thinking about the future of any social phenomenon. In addition, when making war predictions, we risk focusing on certain phenomena and neglecting others that could become more important. Thus, the approach to the future of war requires multidisciplinary.

Reviewing history and taking the example of the 1925 Geneva Protocol on the use of chemical weapons as a starting point, we see that, despite the efforts made, chemical weapons have been used in various conflicts: between 1935 and 1936, Italy used chemical weapons in Ethiopia; in the period 1937-1945 Japan used chemical weapons in China; and in the Iran-Iraq war in the period 1980-1988. In 1993, the Chemical Weapons Convention was signed, yet Syria used chemical weapons from 2012 onwards as indiscriminate punishment for civilians and rebel forces in the areas it controlled. In 2018, the United States, France and the United Kingdom attacked chemical weapons facilities. This example demonstrates that, despite the agreements made, there have continued to be gaps in chemical and biological disarmament, and the agreements are still not respected (Waxman & Oakley, 2022, pp. 17–18).

Relations between the world's major powers are causing concern. In this context, it is difficult to apply the current Conventions and Protocols on the means and methods of the use of force. As such, new rules add difficulties to their application. However, the importance of regulating war continues, and old questions arise in new ways. Technological development can also contribute to monitoring compliance with IHL. Advances in intelligence gathering and precision weaponry make it possible to limit collateral effects (Waxman & Oakley, 2022, p.17–18). Current conflicts often lead to stalemates, resulting in prolonged and discouraging campaigns. The issue of

eliminating leaders of hostile forces in distant territories has become feasible due to technological advances; however, it presents moral and political dilemmas, and international consensus or an update to the ban on assassination is improbable (Waxman & Oakley, 2022, p.19).

Other questions concern the rights and duties of neutral states or states not part of the conflict. In a globalised world, where webs of dependency are established in various fields such as the economy, security and energy, effective neutrality presents many challenges under international law. The use of drugs that allow soldiers to improve their resistance capacities also appears to be challenging to regulate. The Treaty on the Prohibition of Nuclear Weapons, signed in 2017, entered into force on 21 January 2020 for 90 state parties but has not been signed or ratified by any nuclear power. The question, therefore, remains: if, on the one hand, the globalisation of the treaty could prevent a nuclear conflict, on the other, the deterrent effect of nuclear weapons could lead the major powers to confrontation (Waxman & Oakley, 2022, p.19).

As mentioned above, the consolidation and application of existing conventions are complex in the current context and condition new developments in IHL. However, there is scope for possible treaties, primarily in the following areas: the prohibition of participation in offensive combat operations by external private companies; protection of the environment during armed conflicts; management of cyberspace; regulation of weapons incorporating artificial intelligence, including autonomous weapons systems; and the placement of weapons in space (Waxman & Oakley, 2022, p.20).

7. CONCLUSION

War has been a constant in human history and is a biographical milestone in people's history. It has presented itself as a sociological and powerful phenomenon that infects people, finding reasons in defence against threats, in the pursuit of political objectives

or, on the other hand, for moral reasons. In the scourge of war, it is essential to find regulatory solutions that guarantee humanitarian principles in the conduct of hostilities, including minimum standards, the principle of humanity, the principle of distinction, the principle of necessity and the principle of proportionality.

Throughout history, the justification for war, or just war, has been based on moral principles and the supranational interests of individuals' dignity. Linked to these principles is the legitimisation of war, in defence of rights and dignity as a last resort, the question of the rationalisation of war and the protection of non-combatants as the genesis of IHL. However, issues arise with the instrumentalisation of war. International organisations such as the League of Nations and the United Nations have attempted to prohibit the use of force, but armed conflicts persist. Internal or non-international conflicts raise the question of the right to interfere from an ethical and human rights point of view. IHL thus arises from the need for minimal rationalisation in conflicts.

In the middle of the 19th century, IHL became more meaningful and normative, based on the First Geneva Convention and the Lieber Code, intending to make conflicts as rational as possible. IHL has been used utilitarianly by both larger and smaller countries. IHL was divided into two branches: Hague law and Geneva law. However, this division has lost its significance with the Additional Protocols providing humanitarian regulation in international and non-international conflicts. Despite the developments in IHL, we often continue to see non-compliance with the rules, including by those who are signatories.

Additionally, we live in a time of transformation in which recognition is questioned. Systems favour the concentration of power and shape the collective to achieve political goals. Globalisation, the multiplicity of actors, and the multiple economic, social, technological, and religious domains add complexity to politics and international

relations. Rationality and irrationality coexist, with war being a crisis due to a lack of recognition and a power crisis.

The international environment is characterised by complexity in which new domains emerge. The rationalisation of subjectivity, through education, leads to the control of fear and the inversion of values and resentment, ultimately leading to peaceful human coexistence in a complex context. Global challenges of various kinds require a concerted response, also global, even if time and space are different. In this respect, preserving humanitarian norms requires the effective subsidiary responsibility of national, regional and global legal systems. The idea of legal globalism, of a world entity and legal unification, can be the foundation of pacifism. The United Nations embodies a humanist and globalising project based on human rights and a supranational legal system, relying on a post-World War order that has changed.

IHL is applied in exceptional situations, such as war, where harm and death are “legalised”, and rights are deprived in the expectation of a peace agreement. Exceptions to the illegal conflicts where we can find double non-compliance with the law. Agreements and treaties imply the commitment of the parties involved. The framework of national and international political objectives aims, in good faith, for peace and stability. The interpretation of IHL depends on the perspective of the state. Ongoing issues include attempts to exclude groups under IHL, precarious detention, inadequate staff and infrastructure for detention, and inhumane treatment. It is essential to incorporate laws that protect the people most affected by the conflict. The prejudices associated with artificial intelligence, arbitrary detentions, family separations, the disappearance of individuals, and crucial information sharing are defined in special agreements between parties. The specific needs of women, children, people with disabilities, and the elderly highlight the necessity for a dedicated perspective. Therefore, the parties to the conflict must integrate these considerations into the

planning and conduct of operations. Urban areas where civilians are concentrated require that the classification of military objectives by the parties to the conflict aligns with the concept itself. Medical support infrastructures, schools, and camps for displaced persons or refugees should not be classified as military objectives. The suffering of the population is compounded in urban areas through the use of weapons and ammunition with high explosive capacity, necessitating adaptation of means and methods to align with military objectives. The proliferation of warfare tactics, such as sexual violence and hunger, continues to pose significant challenges that require our attention, alongside the need to strengthen humanitarian assistance to civilian populations.

IHL presents challenges to its enforcement. Despite many conventions and protocols, we have seen that the issue is implementation. Currently, more than a hundred and ten conflicts are developing simultaneously. The consolidation of existing norms must be a priority; however, with technological advances, there is room for the development of IHL in the prohibition of participation in offensive combat operations by external private companies, protection of the environment during armed conflicts, management of cyberspace; regulation of weapons incorporating artificial intelligence, including autonomous weapons systems; and the placement of weapons in space. The opportunity of technological progress, particularly artificial intelligence, must serve the interests of IHL as opposed to, for example, disinformation.

War does not make sense if we do not think about the legitimacy of respect for fellow human beings and the preservation of human rights. Nevertheless, we see these assumptions jeopardised by the utilitarianism associated with economic policies under the justification of freedom, devoid of any link to IHL and human rights. Policies centred on individual authority over the collective dangerously threaten to roll back the humanist values won over generations. It is, therefore, up to each individual to

recognise their role in society, and consequently, to the organisations and various institutional levels to ensure the construction of a better world in the present and future. We must find persuasive ways to generate consensus on IHL in different spaces and times, considering universal humanist principles, whatever the situation.

ⁱ According to the International Committee of the Red Cross, the following Conventions have been adopted under Hague law: *Hague Convention (II) on the Laws and Customs of War on Land*, 1899; *Hague Convention on Hospital Ships*, 1904; *Hague Convention (III) on the Opening of Hostilities*, 1907; *Hague Convention (IV) on War on Land and its Annexed Regulations*, 1907; *Hague Convention (V) on Neutral Powers in case of War on Land*, 1907; *Hague Convention (VI) on Enemy Merchant Ships*, 1907; *Hague Convention (VII) on Conversion of Merchant Ships*, 1907; *Hague Convention (VIII) on Submarine Mines*, 1907; *Hague Convention (IX) on Bombardment by Naval Forces*, 1907; *Hague Convention (XI) on Restrictions of the Right of Capture*, 1907; *Hague Convention (XIII) on Neutral Powers in Naval War*, 1907; *Hague Convention for the Protection of Cultural Property*, 1954. Available at: <https://casebook.icrc.org/a-to-z/glossary/hague-conventions>.

ⁱⁱ According to the International Committee of the Red Cross, the Geneva Protocol of 1925 was adopted at the Conference for the Supervision of the International Trade in Arms and Ammunition, held in Geneva under the auspices of the League of Nations. According to Waxman, M. & Oakley, T. (2022, p. 16), the protocol prohibits "the use in war of asphyxiating, poisonous or other gases, and of all liquid materials or similar devices". It extends this prohibition to "the use of bacteriological methods of warfare". This agreement reflects the sentiment against the use of this type of weaponry. This type of weaponry had already been mentioned in the Hague Declaration II of 1899 on asphyxiating gases and in the Hague Land Warfare Regulations of 1907. After their use in the First World War, several other treaties, including the Treaty of Versailles of 1919, reiterated the ban. It should be noted that 146 countries have ratified the protocol—more information is available at <https://ihl-databases.icrc.org/en/ihl-treaties/geneva-gas-prot-1925/state-parties>. See more at: <https://ihl-databases.icrc.org/en/ihl-treaties/geneva-gas-prot-1925/state-parties>.

ⁱⁱⁱ Geneva Convention for the Amelioration of the Condition of the Wounded and of the Armed Forces in Campaign; II Geneva Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Members of the Armed Forces at Sea; III Geneva Convention relative to the Treatment of Prisoners of War; IV Geneva Convention relative to Civilians in Time of War. The four conventions were signed on 12 August 1949.

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DECISION-MAKING AND CULTURAL FACTORS IN COMBAT: A STUDY OF NAVAL RESPONSES TO HOUTHI ATTACKS IN THE RED SEA

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ABSTRACT

The seizure of the *Galaxy Leader* by the Houthis in November 2023 triggered a high-intensity security crisis in the Red Sea, a strategic corridor for global trade. In response, international forces adopted distinct approaches: the United States-led military coalition Operation Prosperity Guardian, launched on December 18, 2023, to conduct offensive strikes, and the European Union's Operation Aspides, initiated in February 2024, with a strictly defensive mandate.

Beyond the political and strategic considerations shaping these operations, naval commanders and crews faced critical human and leadership challenges. The extreme time constraints of modern naval warfare, particularly in countering missile and drone threats, placed immense cognitive pressure on decision-makers at all levels. The necessity for immediate responses within seconds tested not only technological capabilities but also the adaptability, experience, and psychological resilience of personnel.

This study examines how differences in command culture, rules of engagement, and leadership styles influenced operational decision-making in high-risk combat scenarios. Based on an empirical survey among multinational naval forces, it explores how leadership structures, training, and personal judgment impacted real-time decisions to open fire. By analysing these human dimensions, the research provides insight into the balance between strategic directives and on-the-ground decision-making under extreme pressure.

Keywords: decision-making, naval warfare, command culture, rules of engagement, cognitive load, leadership.

1. INTRODUCTION

The ongoing Operation Prosperity Guardian was launched in December 2023 with the stated objective of addressing maritime security challenges in the southern Red Sea and the Gulf of Aden. The initiative aims to ensure freedom of navigation for all nations and to enhance regional security and economic stability.

In parallel, as Houthi attacks intensified, the United States, the United Kingdom, and several partner states initiated airstrikes against targets located on Yemeni territory. These actions, conducted under the auspices of U.S. Central Command's Operation Poseidon Archer, are distinct from Operation Prosperity Guardian. However, their execution led to tensions among the coalition of naval actors in the region. Notably, several European Union member states - including France, Italy, Germany and Greece - opted for a strictly defensive posture. Some of them, like France which is already operating in the region with the European-led EUNAVFOR Atalanta and Agenor missions, were clear that it would cooperate with Washington, but would make their own decisions. A number of European nations were already operating in the region

under the mandate of Operation Atalanta, which was primarily focused on counter-piracy efforts. Operation Atalanta aimed to deter, prevent, and repress acts of piracy and armed robbery at sea, with the possibility of extending its geographical scope to the northern Red Sea. It also sought to contribute to the implementation of the United Nations arms embargo on Somalia, to curb drug trafficking, and to support efforts against Al-Shabaab and its sources of financing, as well as to assist the progress made by the Somali government. Although Spain was the main contributor to Operation Atalanta, it chose not to participate in Operation Aspides, while nevertheless fostering synergies between the two European missions.

Thus, in response, the European Union launched Operation ASPIDES, drawing its name from the ancient Greek term for “shield.” A spokesperson clarified that EUNAVFOR Aspides would be limited to maritime operations conducted in a purely defensive manner, explicitly excluding any engagement on land. Although these European states support the foundational objectives of Prosperity Guardian, their establishment of Aspides reflected a concern that offensive operations onshore might provoke further escalation and potentially entangle them more deeply in the regional conflict.

In this paper, we will study the cultural factors that influenced decision-making in combat.

This study aims to:

1. Examine the strategic mandates and operational frameworks of Operation Prosperity Guardian and Operation Aspides.
2. Analyse the cultural and command differences among multinational naval forces participating in these operations.
3. Assess the cognitive load and decision-making processes of naval officers in high-threat environments.

4. Evaluate the leadership and coordination mechanisms between EU missions and their impact on operational effectiveness.
5. Provide recommendations for enhancing the readiness and interoperability of multinational naval forces in future operations.

The significance of this study lies in its contribution to understanding the complexities of multinational naval operations in high-threat environments. By examining the cultural, operational, and human factors that influence decision-making, this research provides valuable insights for policymakers, military strategists, and naval commanders. The findings can inform the development of training programs, operational protocols, and strategic frameworks to enhance the effectiveness of naval responses to maritime security challenges.

2. LITERATURE REVIEW

2.1 CULTURAL DECISION-MAKING IN NAVAL OPERATIONS

Cultural decision-making in naval operations refers to the influence of national, organisational, and individual cultural factors on the decision-making processes of naval commanders and crews. These cultural factors can include national doctrines, command structures, leadership styles, and operational practices that shape the strategic and tactical responses of naval forces.

Understanding cultural decision-making is essential for enhancing the interoperability and effectiveness of multinational naval operations. By examining the cultural dimensions of decision-making, this study aims to provide insights into the challenges and opportunities of coordinating diverse national forces under a unified command structure.

2.2 HISTORICAL CONTEXT OF NAVAL OPERATIONS IN THE RED SEA

The historical context of naval operations in the Red Sea provides a backdrop for understanding the current challenges and responses to Houthi attacks. The Red Sea has been a strategic maritime route for centuries, with various naval powers seeking to control and protect this vital trade corridor. The historical context includes:

- The role of naval powers in protecting trade routes and ensuring freedom of navigation.
- The evolution of naval doctrines and strategies in response to emerging threats and geopolitical tensions.
- The impact of historical events and conflicts on the development of naval capabilities and operational practices.

2.3 CURRENT GEOPOLITICAL DYNAMICS IN THE RED SEA

The current geopolitical dynamics in the Red Sea are shaped by a complex interplay of regional and international actors, interests, and conflicts. Key geopolitical dynamics include:

- The role of regional powers, such as Saudi Arabia, Iran, and Egypt, in shaping the security and stability of the Red Sea.
- The impact of international actors, such as the United States, the European Union, and China, Russia and India on the geopolitical dynamics and naval operations in the region.
- The challenges and opportunities of coordinating multinational naval operations in a complex and volatile geopolitical environment.

3. METHODOLOGY

This paper adopts a comprehensive qualitative approach to assess the dynamics of decision-making and cultural influences in naval combat operations. The methodology is structured into several interconnected components.

3.1 CONTENT AND STRATEGIC DOCUMENT ANALYSIS

A content analysis of key strategic documents, mandates, and public communications from both the European Union and the United States is conducted. This includes examining official texts, strategic guidelines, and public communications related to naval operations in the Red Sea. The analysis aims to identify overarching strategic goals, operational mandates, and official doctrinal positions that shape military decision-making in multinational naval operations. Key documents such as the White Paper on European Defence Readiness 2030 by the Senior Policy Officer Marcus Houben and relevant EU and U.S. strategic directives are reviewed to discern commonalities and differences in strategic objectives and the geopolitical context framing these operations.

3.2 OPERATIONAL REVIEWS OF COORDINATION MECHANISMS

A detailed review of the coordination mechanisms between Operation ATALANTA and Operation ASPIDES is conducted, focusing on the interoperability and operational synergy between these two multinational efforts. This includes examining how command structures, operational objectives, and communication channels are established and maintained. The analysis also evaluates tactical constraints and the real-time adaptability of these operational frameworks, especially under time-sensitive conditions.

3.3 EMPIRICAL INSIGHTS FROM INTERVIEWS AND QUESTIONNAIRES

The research integrates empirical insights from interviews and questionnaires conducted with naval officers from countries participating in the operations. These qualitative insights provide firsthand perspectives on leadership dynamics, decision-making under pressure, and the influence of cultural and national doctrinal factors on operational effectiveness. The survey data specifically addresses:

- Perceptions of leadership structure and command effectiveness during engagements.
- Decision latency and the cognitive strain officers experience when making real-time combat decisions.
- The influence of national doctrinal approaches on engagement thresholds and rules of engagement (ROE).

3.4 COMPARATIVE DOCTRINAL AND RULES OF ENGAGEMENT ANALYSIS

A comparative doctrinal analysis is undertaken to explore the differences and similarities in rules of engagement (ROE), command structures, and leadership training programs among participating nations. This analysis focuses on how different national doctrines shape operational outcomes, particularly in high-stakes, time-critical combat situations. Special attention is given to understanding how cultural factors influence decision-making processes in multinational environments.

3.5 THEMATIC CODING AND ANALYSIS OF KEY CULTURAL, OPERATIONAL, AND STRUCTURAL FACTORS

Using thematic coding techniques, the qualitative data obtained from interviews, questionnaires, and document analysis is categorised and analysed to identify recurring themes and patterns. This analysis focuses on the following key areas:

- Cultural influences on decision-making and leadership dynamics within multinational teams.
- The impact of operational structures on the efficiency of decision-making processes.
- Structural factors, such as command hierarchy and resource allocation, that shape engagement outcomes.

3.6 CASE STUDY ANALYSIS: OPERATION ASPIDES

The paper incorporates a detailed qualitative analysis of three core sources related to Operation ASPIDES:

1. Operational briefings from Captain Elia Cuoco's strategic presentation (ESDC 2025), outlining the mission objectives, force composition, and key tactical constraints of Operation ASPIDES.
2. Strategic framework analysis from the Marcus Houben White Paper for European Defence Readiness 2030, which situates ASPIDES within the broader European defence posture and identifies capability gaps and investment mechanisms.
3. Doctrinal perspectives from Bernard Siman's "Eurasian Spine" which presents a conceptual framework for integrated maritime security across Europe-Asia trade corridors.

These sources provide a contextual foundation for understanding the strategic, operational, and doctrinal influences that shape naval engagement decisions in the Red Sea and the broader region.

This integrated methodology allows for a multidimensional analysis of the factors influencing naval decision-making, particularly in the context of multinational operations. The findings offer a nuanced understanding of how structural and cultural factors interact to influence real-time combat decisions, particularly under time pressure, and highlight the complexities of coordinating and executing multinational naval operations in volatile geopolitical environments.

3.7 DATA COLLECTION AND ANALYSIS

Data collection for this study involved a combination of primary and secondary sources. Primary data was obtained through interviews and questionnaires with naval officers from various countries participating in Operations Prosperity Guardian and Aspidem. Secondary data was gathered from strategic documents, operational briefings, and academic literature on naval warfare and decision-making.

The qualitative data from interviews and questionnaires was analysed using thematic coding techniques to identify recurring themes and patterns. Quantitative data from surveys was analysed using statistical methods to assess the significance of findings related to decision-making processes and operational effectiveness.

3.8 ETHICAL CONSIDERATIONS

Ethical considerations were paramount in the conduct of this study. All participants in interviews and questionnaires were assured of anonymity and confidentiality in accordance with Chatham House rules. Informed consent was obtained from all

participants, and the study adhered to ethical guidelines for research involving human subjects.

3.9 LIMITATIONS OF THE STUDY

The limitations of this study include:

- The challenges of obtaining comprehensive and representative confidential data from multinational naval forces operating in high-threat environments.
- The potential biases and subjectivities in the qualitative data obtained from interviews and questionnaires.
- The constraints of time and resources in conducting a detailed and nuanced analysis of the cultural, operational, and human factors influencing decision-making in naval operations.

4. RESULTS

4.1 DIVERGENCE IN STRATEGIC MANDATES

Operation Prosperity Guardian, though multinational, is led by U.S. naval command and includes active kinetic operations against Houthi missile launch sites. In contrast, Operation ASPIDES is governed by a purely defensive doctrine, operating under the EU's Political and Security Committee (PSC). As codified in the February 2024 operational plan, its Rules Of Engagement (ROE) authorise action only in direct defence of merchant vessels or EU naval assets.

This divergence in mandate resulted in national caveats affecting command unity. Officers from French and Italian vessels reported hesitation in combined operations with U.S. forces due to divergent ROE interpretations, even under coordinated maritime domain awareness (MDA).

4.2 CULTURAL AND COMMAND DIFFERENCES

Survey results revealed notable differences in the perceived flexibility of decision-making:

- Anglo-American crews rated their engagement autonomy higher, citing flatter command structures and pre-delegated authority.
- Southern European crews (notably Italy and Spain) described more centralized decision chains, with significant reliance on direct confirmation from national authorities.

Training backgrounds also influenced perceived cognitive preparedness. Officers with prior experience in NATO rapid reaction forces reported lower stress levels under immediate threat conditions compared to those whose experience was primarily in EU-led missions or national patrols.

4.3 REAL-TIME COGNITIVE LOAD

Respondents across all nationalities emphasized the intense time compression involved in drone and missile countermeasures. Decision windows for defensive fire were often under 5–8 seconds. Key stressors included:

- Ambiguity over threat identification (especially UAVs with unclear IFF signals).
- Lack of standardised escalation protocols across EU forces.
- Concerns over political ramifications of unintended engagements.

Officers reported that experience and prior exposure to simulated drills were more decisive in reaction accuracy than purely technical training.

4.4 LEADERSHIP AND COORDINATION BETWEEN EU MISSIONS

The evolving cooperation between Operation ATALANTA and ASPIDES highlights a deliberate move toward greater European strategic coherence. Operational synergies have been established through:

- Interconnected Command Structures: ASPIDES and ATALANTA have installed each other's Command and Information Systems (CIS) in their respective OHQs and FHQs, enabling real-time data sharing.
- Weekly Coordination Meetings and shared user requirements in the Maritime Security Centre – Horn of Africa (MSCHOA) and the Shared Awareness and Deconfliction mechanism (SHADE).
- Integrated Maritime Situational Awareness (MSA) tools to harmonise decision-making under high cognitive load and short time windows.
- A common front with the maritime industry, especially regarding threat notification and protective corridors.

Survey responses emphasised that these leadership mechanisms, especially collaborative information architecture and routine multinational planning, enhanced confidence and reduced reaction time in ambiguous scenarios. Officers also noted the importance of Key Leader Engagement (KLE) coordination in the Area of Operations (AOO), currently under review as a formal synergy expansion.

4.5 CASE STUDIES

4.5.1 CASE STUDY 1: OPERATION PROSPERITY GUARDIAN

Operation Prosperity Guardian, led by the United States, has been characterised by its proactive and offensive approach to countering Houthi threats. The operation involves a coalition of nations, including the United Kingdom and several other allies,

conducting airstrikes and naval operations to degrade Houthi capabilities and protect maritime traffic.

Key findings from this case study include:

- The effectiveness of pre-authorized engagements and broader ROE in enabling rapid responses to Houthi threats.
- The challenges of coordinating multinational forces with differing national mandates and operational constraints.
- The importance of centralised command structures in facilitating decisive action and maintaining operational coherence.

4.5.2 CASE STUDY 2: OPERATION ASPIDES

Operation Aspides, led by the European Union, represents a defensive and multilateral approach to maritime security in the Red Sea. The operation focuses on protecting EU maritime interests and ensuring freedom of navigation through defensive measures and coordinated patrols.

Key findings from this case study include:

- The impact of restrictive ROE and legal frameworks on operational flexibility and deterrence.
- The role of collaborative information-sharing and joint planning in enhancing situational awareness and decision-making.
- The challenges of maintaining operational readiness and cohesion in a multinational environment with diverse national interests and doctrinal approaches.

4.5.3 CASE STUDY 3: FRENCH NAVAL OPERATIONS

France's participation in multinational naval operations in the Red Sea provides a unique perspective on the balance between national sovereignty and collective security. French naval forces have operated under both EU and U.S.-led missions, emphasizing the importance of maintaining national command and control while contributing to multinational efforts.

Key findings from this case study include:

- The significance of national caveats and operational autonomy in shaping French naval responses to Houthi threats.
- The role of interoperability and information-sharing in enhancing the effectiveness of French naval operations.
- The challenges of coordinating with multinational forces with differing strategic objectives and operational mandates.

4.6 CULTURAL DECISION-MAKING IN NAVAL OPERATIONS

Cultural decision-making in naval operations refers to the influence of national, organisational, and individual cultural factors on the decision-making processes of naval commanders and crews. These cultural factors can include national doctrines, command structures, leadership styles, and operational practices that shape the strategic and tactical responses of naval forces.

Key findings from the analysis of cultural decision-making include:

- The impact of national doctrines and command structures on the operational effectiveness and decision-making processes of naval forces.
- The role of leadership styles and operational practices in shaping the strategic and tactical responses of multinational naval operations.

- The challenges of coordinating diverse national forces under a unified command structure and the opportunities for enhancing interoperability and effectiveness.

4.7 ANALYSIS OF DECISION-MAKING PROCESSES

The analysis of decision-making processes in naval operations provides insights into the cognitive, emotional, and psychological dimensions of decision-making under pressure. Key findings from this analysis include:

- The impact of cognitive load and time compression on the decision-making processes of naval officers in high-threat environments.
- The role of experience, training, and simulation in enhancing the adaptability and resilience of naval crews in responding to missile and drone threats.
- The challenges of maintaining situational awareness and effective communication in a complex and dynamic operational environment.

4.8 EVALUATION OF LEADERSHIP AND COMMAND STRUCTURES

The evaluation of leadership and command structures in multinational naval operations highlights the importance of effective leadership in shaping the strategic and tactical responses of naval forces. Key findings from this evaluation include:

- The impact of leadership styles and command structures on the operational effectiveness and decision-making processes of naval forces.
- The role of leadership in fostering trust, cohesion, and confidence among multinational crews in high-threat environments.
- The challenges of maintaining effective leadership and command structures in a complex and volatile geopolitical environment.

5. DISCUSSION

The ongoing coordination between Operations ASPIDES and ATALANTA, and their coexistence alongside Operation Prosperity Guardian, provides a unique lens through which to examine the role of culture, leadership, and structural variation in naval decision-making. Together, these missions form a rare real-world experiment in how different political mandates and institutional norms shape behaviour under high-risk conditions.

5.1 DISTRIBUTED COMMAND CULTURE AND OPERATIONAL SYNERGY

The collaboration between ASPIDES and ATALANTA represents an emerging model of European distributed command culture. Despite originating from distinct mandates—ATALANTA focusing on anti-piracy and ASPIDES on defending commercial traffic against aerial and missile threats—their convergence demonstrates increasing operational integration:

- Their information systems are interoperable, with ATALANTA's Command and Information System (CIS) installed in ASPIDES headquarters and vice versa.
- Regular joint planning meetings, shared maritime situational awareness (MSA), and common engagement with industry stakeholders have fostered technical and procedural trust.
- Leadership routines, such as weekly coordination and shared intelligence platforms like MSCIO and SEA DJI, reinforce tactical cohesion and a culture of mutual reliance.

While options are being explored in Brussels—ranging from maintaining separate operations to full unification under the Military Planning and Conduct Capability (MPCC)—each alternative reflects deeper choices about how the EU should structure

authority and risk in combat zones. A fully unified operation could enhance rapid response but would require high degrees of political trust and institutional coherence.

5.2 JUXTAPOSITION WITH U.S.-LED OPERATIONAL DOCTRINE

In parallel to the EU's maritime missions, the U.S.-led Operation Prosperity Guardian operates under a very different philosophy. Although both coalitions seek to ensure freedom of navigation and deter threats, the U.S. approach integrates offensive and defensive actions more seamlessly. Under this framework:

- Engagements are often pre-authorised, with broader rules of engagement (ROE) allowing for immediate kinetic responses.
- Commanders operate with greater latitude, guided by strategic intent rather than narrowly defined national constraints.

In contrast, ASPIDES embodies a “shield-first” doctrine, shaped by Europe's emphasis on legal proportionality, multilateral consensus, and strategic de-escalation. These cultural underpinnings are not simply philosophical; they produce tangible differences in engagement thresholds, response timing, and mission interpretation.

This divergence has practical consequences. For example, while ASPIDES has succeeded in protecting merchant vessels and avoiding escalation, its deterrent value may be limited—particularly against non-state actors like the Houthis, whose actions fall outside classical models of deterrence.

5.3 COGNITIVE AND HUMAN DIMENSIONS OF COMBAT DECISION-MAKING

In both frameworks, the human element remains central to naval effectiveness. High-threat zones such as the Red Sea impose immense cognitive load on decision-makers.

Naval officers must interpret ambiguous sensor data, assess threats in seconds, and often make life-or-death choices with incomplete information.

Under the ASPIDES model, where actions must comply with a more restrictive legal and political framework, this pressure is compounded. The emotional and psychological strain of maintaining a defensive posture—knowing that an attack may come without pre-emption—requires more than technology:

- Clear chains of authority are essential to prevent hesitation.
- Rehearsal and scenario-based training build the reflexive competence needed under extreme pressure.
- Trust within and across national crews enhances unit cohesion and reduces the risks of miscommunication.

The U.S. system, with more centralized authorization and operational discretion, tends to prioritize speed and initiative. However, this can introduce challenges in multinational coordination, particularly when partners operate under more restrictive mandates.

5.4 STRATEGIC IMPLICATIONS AND CULTURAL NEGOTIATIONS

The ASPIDES–ATALANTA experience underscores the EU’s ability to operate complex, multi-nation security missions, albeit within a framework still negotiating its collective military identity. The possible future consolidation of EU maritime operations points toward a more coherent strategic posture, but would also require addressing:

- Differing national legal frameworks for use of force.
- The tension between political control and operational flexibility.
- Variations in leadership expectations, mission tempo, and ROE interpretation.

Ultimately, the juxtaposition of ASPIDES and Prosperity Guardian reveals not only contrasting military doctrines but also contrasting worldviews. The EU's model favours legal clarity and defensive proportionality; the U.S. approach privileges initiative and deterrent signalling. These differences, while operational, are also deeply cultural.

Yet despite their divergence, both systems recognize that effective command in combat cannot be improvised. It must be rooted in shared values, rehearsed interoperability, and resilient leadership—qualities that become most evident when facing adversaries in real time.

5.5 COMPARATIVE ANALYSIS OF MULTINATIONAL NAVAL OPERATIONS

The comparative analysis of multinational naval operations in the Red Sea highlights the complexities and challenges of coordinating diverse national forces under a unified command structure. Key findings from this analysis include:

- The impact of cultural and doctrinal differences on operational effectiveness and decision-making processes.
- The role of leadership and command structures in shaping the strategic and tactical responses of multinational forces.
- The challenges of maintaining operational readiness and cohesion in a high-threat environment with diverse national interests and operational mandates.

5.6 LESSONS LEARNED AND BEST PRACTICES

The lessons learned from the multinational naval operations in the Red Sea provide valuable insights for enhancing the readiness and interoperability of naval forces in future operations. Key lessons and best practices include:

- The importance of interoperable training environments and cross-national command exchange in fostering operational cohesion and effectiveness.
- The role of unified escalation protocols and standardised operational procedures in enhancing decision-making and response capabilities.
- The significance of leadership and command structures in shaping the strategic and tactical responses of multinational forces.

5.7 CULTURAL DECISION-MAKING IN NAVAL OPERATIONS

Cultural decision-making in naval operations refers to the influence of national, organisational, and individual cultural factors on the decision-making processes of naval commanders and crews. These cultural factors can include national doctrines, command structures, leadership styles, and operational practices that shape the strategic and tactical responses of naval forces.

Key findings from the analysis of cultural decision-making include:

- The impact of national doctrines and command structures on the operational effectiveness and decision-making processes of naval forces.
- The role of leadership styles and operational practices in shaping the strategic and tactical responses of multinational naval operations.
- The challenges of coordinating diverse national forces under a unified command structure and the opportunities for enhancing interoperability and effectiveness.

5.8 ANALYSIS OF DECISION-MAKING PROCESSES

The analysis of decision-making processes in naval operations provides insights into the cognitive, emotional, and psychological dimensions of decision-making under pressure. Key findings from this analysis include:

- The impact of cognitive load and time compression on the decision-making processes of naval officers in high-threat environments.
- The role of experience, training, and simulation in enhancing the adaptability and resilience of naval crews in responding to missile and drone threats.
- The challenges of maintaining situational awareness and effective communication in a complex and dynamic operational environment.

5.9 EVALUATION OF LEADERSHIP AND COMMAND STRUCTURES

The evaluation of leadership and command structures in multinational naval operations highlights the importance of effective leadership in shaping the strategic and tactical responses of naval forces. Key findings from this evaluation include:

- The impact of leadership styles and command structures on the operational effectiveness and decision-making processes of naval forces.
- The role of leadership in fostering trust, cohesion, and confidence among multinational crews in high-threat environments.
- The challenges of maintaining effective leadership and command structures in a complex and volatile geopolitical environment.

6. CONCLUSION

As the Red Sea remains a flashpoint in global maritime security, the experience of Operation ASPIDES highlights both the promise and limitation of EU-led defence

responses. Cultural factors—ranging from command doctrine to national legal constraints—profoundly shape decision-making under fire.

This study suggests that future European operations must address these disparities by fostering interoperable training environments, cross-national command exchange, and unified escalation protocols. Only then can naval forces respond not just with legality, but with speed, cohesion, and confidence.

The findings of this study underscore the complexities and challenges of multinational naval operations in high-threat environments. Key findings include:

- The impact of cultural and doctrinal differences on operational effectiveness and decision-making processes.
- The role of leadership and command structures in shaping the strategic and tactical responses of multinational forces.
- The challenges of maintaining operational readiness and cohesion in a high-threat environment with diverse national interests and operational mandates.

Based on the findings of this study, the following recommendations are proposed for enhancing the readiness and interoperability of multinational naval forces in future operations:

- Foster interoperable training environments and cross-national command exchange to enhance operational cohesion and effectiveness.
- Develop unified escalation protocols and standardized operational procedures to improve decision-making and response capabilities.
- Strengthen leadership and command structures to shape the strategic and tactical responses of multinational forces.

The implications of this study for policy and practice are significant. The findings highlight the need for policymakers, military strategists, and naval commanders to

consider the cultural, operational, and human factors that influence decision-making in multinational naval operations. By addressing these factors, future operations can be designed to enhance the readiness and interoperability of naval forces in high-threat environments.

Future research directions could include:

- Further exploration of the cultural and doctrinal differences among multinational naval forces and their impact on operational effectiveness.
- Analysis of the role of leadership and command structures in shaping the strategic and tactical responses of multinational forces.
- Investigation of the challenges of maintaining operational readiness and cohesion in high-threat environments with diverse national interests and operational mandates.

In conclusion, the experience of Operation ASPIDES and the broader context of multinational naval operations in the Red Sea provide valuable insights into the complexities and challenges of coordinating diverse national forces under a unified command structure. The findings of this study underscore the importance of cultural, operational, and human factors in shaping the strategic and tactical responses of naval forces in high-threat environments. By addressing these factors, future operations can be designed to enhance the readiness and interoperability of naval forces in responding to maritime security challenges.

We extend our sincere gratitude to the many officers who kindly agreed to participate in this study and respond to our inquiries.

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Theme II – Military Leadership and Technological Challenges

PREDICTING SELF-LEADERSHIP IN MILITARY CADETS: A MACHINE LEARNING APPROACH

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ABSTRACT

Self-leadership is a key competency in military contexts, influencing decision-making, adaptability, and operational performance. This study proposes a data-driven approach to optimise the measurement of self-leadership among cadets at a military academy.

Building on the original theoretical framework by Neck and Manz (1992, 1996), and the measurement model developed by Houghton and Neck (2002), which comprises nine factors and 35 items, we applied Recursive Backward Elimination combined with Artificial Neural Networks in MATLAB to iteratively reduce the number of predictive variables.

After six elimination rounds, an optimised model with four factors and 18 items was obtained, achieving a predictive accuracy of $R^2 \approx 0.93$ with only a minimal increase in mean squared error. This streamlined version retained 92.6% of the explained variance while significantly reducing the evaluative burden.

Comparisons between the original and optimised models, based on classification accuracy and Pearson correlation, revealed high consistency, with the optimised version – hereafter referred to as Mod_4F_RBE – producing the fewest discrepancies. This confirms the robustness of the reduced structure for both continuous and categorical applications.

These results highlight the potential of machine learning to optimise psychometric instruments and promote their integration into applied social science. The proposed methodology offers a replicable model for improving assessment efficiency in demanding environments.

Keywords: Self-Leadership, Artificial Neural Networks, Recursive Backward Elimination, Machine Learning, Leadership Prediction.

1. INTRODUCTION

The growing complexity of military operations and leadership demands has renewed interest in intrapersonal competencies such as self-regulation, autonomy, and adaptability. Among these, self-leadership – introduced by Manz (1986) and later expanded by Neck and Manz (1992, 1996) – is defined as the process through which individuals influence themselves to achieve the self-direction and motivation required for effective performance. Within military education and training, it has gained prominence due to its role in developing autonomous leaders capable of operating under pressure.

The Revised Self-Leadership Questionnaire (RSLQ), developed by Houghton and Neck (2002), is a key instrument for measuring this construct, encompassing nine factors across three core dimensions. Its validity has been demonstrated across diverse cultural and professional contexts (Houghton, Dawley, & DiLiello, 2012; Carmeli et al., 2006). However, Ho and Nesbit (2014) questioned whether such comprehensive tools could be streamlined without compromising psychometric quality.

Simultaneously, the rise of machine learning (ML) in the social and behavioural sciences has enabled new approaches to refining theoretical models (Bzdok, Altman, & Krzywinski, 2018). Among these techniques, Artificial Neural Networks show

particular promise in modelling complex, non-linear relationships often beyond the reach of traditional methods. Yet, their application in leadership research remains limited, partly due to concerns over accessibility and interpretability (Lepri et al., 2017).

Recursive Backward Elimination (RBE), a feature selection technique that iteratively removes less impactful variables while monitoring model performance, is particularly promising. Widely used in fields such as bioinformatics and finance (Guyon & Elisseeff, 2003), its application to psychometric optimisation is still in early stages. Preliminary evidence (e.g., Zhou et al., 2021) suggests its potential to identify minimal predictor sets while preserving explanatory power.

Building on these developments, this study explores the potential of ML – specifically Artificial Neural Networks and RBE – to optimise self-leadership measurement in a military context. Using a validated dataset of cadet responses to the RSLQ, it aims to: (1) identify the most salient predictors of self-leadership, and (2) assess whether a reduced-factor model derived through ML can maintain robust predictive performance. The research was guided by two questions:

- Which self-leadership factors best predict overall self-leadership among military cadets?
- Can ML techniques – namely Artificial Neural Networks and Recursive Backward Elimination – generate a more parsimonious self-leadership model without compromising psychometric robustness?

The remainder of this article is structured as follows. Section 2 reviews the theoretical foundations of self-leadership, the RSLQ structure, and ML applications in the social sciences. Section 3 describes the methodology, including dataset preparation and RBE implementation. Section 4 presents and discusses the results of the model reduction

process. Section 5 outlines the conclusions, practical implications, and future directions.

2. LITERATURE REVIEW

2.1 SELF-LEADERSHIP

The concept of self-leadership was introduced by Charles Manz (1986) and subsequently developed by Christopher Neck and colleagues (Houghton & Neck, 2002; Neck & Houghton, 2006). It refers to individuals' capacity to influence their own behaviour, thoughts, and emotions in pursuit of personal and professional goals. The construct is structured around three dimensions: behaviour-focused strategies, natural reward strategies, and constructive thought pattern strategies. These are operationalised through nine factors, typically measured using the 35-item Revised Self-Leadership Questionnaire (RSLQ) (Houghton & Neck, 2002).

Self-leadership distinguishes itself from related constructs such as self-regulation and self-management by emphasising proactive and intentional self-influence. Whereas self-regulation typically involves reactive control in response to external stimuli, self-leadership represents a more internalised, future-oriented form of personal agency. Empirical studies have shown that it contributes uniquely to outcomes such as motivation, performance, and well-being, even when controlling for other self-regulatory processes (Neck & Houghton, 2006; Stewart et al., 2011).

The RSLQ has been widely validated across educational, healthcare, and organisational settings. Its factorial structure has been replicated in multiple countries, supporting its robustness and cross-cultural relevance (Houghton et al., 2012; Ho & Nesbit, 2014). This validation strengthens its position as a foundational tool for assessing self-leadership, especially in structured environments such as military education.

To simplify the RSLQ while preserving its theoretical core, Houghton et al. (2012) proposed the Abbreviated Self-Leadership Questionnaire (ASLQ), a nine-item version reflecting the three core dimensions. Though reliable and valid across professional settings, the ASLQ prioritises conceptual representation over empirical optimisation, leaving open the possibility that alternative approaches – particularly those focused on predictive performance – may yield more parsimonious and analytically robust models.

Table 1 summarises the nine RSLQ factors, grouped by their respective theoretical dimensions, along with a brief description of each factor's core function.

Table 1

Factors of the RSLQ grouped by theoretical dimensions

Dimension	Factor / Variable	Brief Description
Behavior-Focused Strategies	1. Goal Setting (SelfGoal)	Promotion of goal-setting and strategies for enhancing personal performance (Manz, 1986; Neck & Manz, 2010).
	2. Self-Reward (SelfRew)	Self-feedback strategies that reinforce desired behaviours (Houghton & Neck, 2002).
	3. Self-Punishment (SelfPun)	Self-feedback strategies aimed at correcting ineffective behaviours (Houghton & Neck, 2002; Neck & Houghton, 2006).
	4. Self-Observation (SelfObs)	Monitoring one's own behaviour and performance. (Houghton & Neck, 2002; Neck & Houghton, 2006).
	5. Self-Cueing (SelfCue)	Use of visual/auditory cues to support performance (Houghton & Neck, 2002; Neck & Houghton, 2006).
Natural Reward Strategies	6. Natural Reward Strategies (NatRew)	Task reconfiguration to increase intrinsic satisfaction and reduce negative perceptions (Houghton & Neck, 2002; Neck & Houghton, 2006).
Constructive Thought Patterns	7. Visualizing Successful Performance (VisSuccPerf)	Mental rehearsal of success scenarios before undertaking a task (Houghton & Neck, 2002; Neck & Houghton, 2006).
	8. Self-Talk (SelfTalk)	Development of positive internal dialogue to support motivation (Houghton & Neck, 2002; Neck & Houghton, 2006).
	9. Evaluating Beliefs and Assumptions (EvaBelAss)	Critical analysis of dysfunctional beliefs that interfere with performance (Burns, 1980; Ellis, 1977).

Note. The abbreviations presented here (e.g., SelfGoal, NatRew, VisSuccPerf) are used throughout the manuscript to refer to the corresponding self-leadership factors.

2.2 MACHINE LEARNING IN THE SOCIAL SCIENCES

The following section addresses how ML techniques are being applied to optimise the assessment and modelling of psychological constructs.

Modern organisations operate in increasingly complex environments marked by limited resources and rapid technological change. In this context, Decision Support Systems (DSS) have evolved to assist managers by integrating data, models, and intuitive interfaces. The integration of Artificial Intelligence (AI) further enhances these systems, enabling reasoning under uncertainty using both empirical and theoretical knowledge.

Within AI, Case-Based Reasoning aids decision-making through analogies with past cases. More broadly, ML has gained prominence in the social sciences for modelling complex human phenomena such as behaviour, leadership, and performance. Algorithms like ANNs, Decision Trees, and Support Vector Machines offer strong predictive power and generalisability across diverse datasets (Bzdok et al., 2018; Yarkoni & Westfall, 2017).

Studies by Whelan et al. (2020) and Khalil et al. (2022) showed that ML can classify leadership styles and predict performance using psychometric data. While still underused in military contexts, ML shows increasing promise in enhancing soft skills assessment and uncovering latent psychological traits.

Effective application of ML in psychology requires a structured predictive modelling process. Two key components are feature selection: identifying relevant input variables and modelling non-linear relationships. RBE supports the former by iteratively simplifying the model while preserving accuracy. ANNs, meanwhile, are well suited to capture complex interactions that traditional models often overlook. Despite their success in other fields (Guyon & Elisseeff, 2003), such techniques remain

underexplored in leadership and psychometric research, where they offer considerable untapped potential.

2.3 RECURSIVE BACKWARD ELIMINATION WITH ARTIFICIAL NEURAL NETWORKS

RBE, also known as Recursive Feature Elimination, is a widely used ML technique for optimising models by identifying subsets of input variables that maximise predictive performance (Guyon et al., 2002). The process begins with the full set of variables and iteratively removes the least impactful one—i.e., the variable whose exclusion results in the smallest decrease in performance, typically assessed via Mean Squared Error (MSE) or the coefficient of determination (R^2).

When combined with ANNs, RBE is particularly effective in modelling complex, multidimensional constructs, such as those encountered in psychology and behavioural sciences. Although still underutilised in the social sciences, its application is growing as a method for refining and simplifying psychometric instruments (e.g., Abdar et al., 2021).

In addition to identifying key predictors, RBE facilitates the development of more efficient and interpretable models without compromising predictive validity. As such, it complements traditional approaches like confirmatory factor analysis and structural equation modelling, contributing to the advancement of quantitative leadership research.

3. MATERIALS AND METHODS

3.1 METHODS

The study employed an iterative approach to factor elimination, guided by the performance of ANN models developed in MATLAB's Neural Network Toolbox. Similar to reverse backward elimination, the aim was to identify the smallest set of predictive variables capable of retaining the explanatory power of the original model. In each iteration, one latent factor was removed and changes in performance were recorded, focusing on MSE and R^2 , as recommended by Haykin (2009) and adopted in psychometric research (Zhang et al., 2019; Saghaei et al., 2021).

This methodology aligns with structural refinement strategies in ML, particularly relevant for psychometric optimisation without compromising predictive validity (Huang et al., 2022). The rationale is that factors with limited predictive contribution can be excluded, enhancing parsimony and practical applicability in contexts such as military training.

By comparing each model to its immediately preceding version, the approach enables controlled performance assessment and identifies the threshold beyond which model robustness declines – reflecting the logic proposed by Guyon and Elisseeff (2003) in their foundational work on feature selection.

RBE was used to reduce input factors while maintaining predictive accuracy. A baseline model with nine factors was trained in MATLAB's Neural Network Fitting Tool, using the Levenberg–Marquardt algorithm and a single hidden layer of 10 neurons.

At each iteration, one factor was excluded and the model retrained. The factor whose removal caused the smallest change in performance – measured by MSE and R^2 – was eliminated from subsequent iterations. The process continued until further elimination

increased MSE by more than 5% or reduced R^2 by more than 2%, following thresholds suggested in feature selection literature (Guyon et al., 2002; Abdar et al., 2021).

Model performance was evaluated across training, validation, and testing sets using a 70/15/15 data split. For each iteration, MSE, R^2 , and the number of training epochs were recorded to ensure robust comparisons between reduced models.

3.2 DATA COLLECTION AND PREPARATION

Data were collected at the Portuguese Military Academy in two separate waves. The first took place in the 2015/2016 academic year and yielded 311 valid responses; the second occurred in 2020/2021, with 366 valid responses. In both instances, data were gathered from the entire population of undergraduate cadets (1st to 4th year), ensuring full institutional coverage. Participation was voluntary, and responses were handled with strict confidentiality, allowing for linkage with academic performance indicators solely for research purposes and in line with institutional data handling protocols.

The dataset comprises responses from 677 military cadets who completed the 35-item RSLQ, developed by Houghton and Neck (2002). This instrument assesses nine self-leadership factors, grouped into three core dimensions: behaviour-focused strategies, natural reward strategies, and constructive thought pattern strategies.

Items were rated on a Likert scale and aggregated by factor. Factor scores were computed as the mean of their items and weighted proportionally to the number of items in each factor (e.g., a factor with five items received a weight of $5/35 = 0.1429$). A global self-leadership index was then calculated by summing the weighted factor scores and normalising the result, yielding a final score between 0.36 and 1.8. This composite score served as the output variable in all ML models.

3.3 TOOLS AND SOFTWARE

All analyses were conducted using MATLAB R2015a® with the Neural Network Toolbox. Data preprocessing and preliminary calculations were performed in Microsoft Excel®. Pearson correlation analyses comparing the global self-leadership indices from the original and reduced (four-factor) models were conducted in IBM SPSS®.

4. PRESENTATION AND DISCUSSION OF RESULTS

4.1 SELF-LEADERSHIP MODEL VIA RECURSIVE BACKWARD ELIMINATION

The study began with an analysis of the complete self-leadership model proposed by Houghton and Neck (2002), which consists of nine factors and 35 items. Using the RBE algorithm, the objective was to identify the factors with the least predictive power in estimating the global self-leadership index. This evaluation was based on two primary criteria: variations in MSE and changes in R^2 , measured after individually removing each factor. The global self-leadership index was calculated as a weighted mean of the factors, with weights reflecting the number of items associated with each factor.

The initial model, which included all nine factors, demonstrated near-perfect predictive performance ($R = 0.99999$; $MSE = 7.20391e^{-11}$) and served solely as the reference for the first iteration. Thereafter, each iteration used the reduced model from the previous round as its new base, ensuring progressive control over performance degradation throughout the optimization process. In each round, the factor whose removal yielded the smallest increase in MSE was deemed the least impactful and therefore excluded, following best practices in feature selection (Guyon & Elisseeff, 2003).

In the first iteration, the exclusion of SelfGoal produced the lowest increase in MSE ($8.70596e^{-5}$), leading to its removal.

In the second iteration, starting from an eight-factor model, SelfRew was excluded after showing the smallest impact on MSE ($2.14744e^{-4}$).

During the third iteration, the model still retained strong predictive power, and the removal of SelfPun was selected ($MSE = 5.80576e^{-4}$).

The fourth iteration began with six factors, and SelfCue was excluded based on minimal impact ($MSE = 1.31038e^{-3}$).

In the fifth iteration, SelfTalk was identified for exclusion ($MSE = 1.26511e^{-3}$) from the remaining five-factor model.

Finally, the sixth iteration worked with a four-factor model, where any further removal caused unacceptable degradation of predictive performance ($R^2 = 0.926$, baseline $MSE = 1.31038e^{-3}$).

Thus, the RBE process confirmed that the optimal model was reached after six iterations, preserving statistical robustness with only 18 items.

Final Predictive Model: The RBE process identified the following four factors as essential for maintaining predictive integrity:

- SelfPun (Self-punishment strategies);
- NatRew (Natural rewards);
- VisSuccPerf (Visualizing successful performance);
- EvaBelAss (Evaluating beliefs and assumptions).

Table 2 summarizes the progression of MSE values and the eliminated factors in each iteration.

Table 2*Mean squared error progression and factor removal across RBE iterations*

	08 Var	07 Var	06 Var	05 Var	04 Var	03 Var
Fator removed	Training Mean Squared Error (MSE)					
SelfGoal	8,70596e ⁻⁵	2,75507e ⁻³				
SelfRew	1,62485e ⁻⁴	2,14744e ⁻⁴	3,74882e ⁻⁴			
SelfPun	2,17516e ⁻⁴	3,28731e ⁻⁴	5,80576e ⁻⁴	7,33337e ⁻⁴	1,10319e ⁻³	1,80379e ⁻³
SelfObs	5,69430e ⁻⁵					
SelfCue	1,13050e ⁻⁴	1,44552e ⁻⁴	4,58158e ⁻⁴	6,90554e ⁻⁴		
NatRew	2,09677e ⁻³	2,80874e ⁻³	3,24725e ⁻³	3,59725e ⁻³	4,31695e ⁻³	5,01618e ⁻³
VisSuccPerf	2,88446e ⁻⁴	4,24198e ⁻⁴	7,96433e ⁻⁴	1,25766e ⁻³	1,45136e ⁻³	2,46096e ⁻³
SelfTalk	4,13805e ⁻⁴	4,08387e ⁻⁴	7,15411e ⁻⁴	7,58314e ⁻⁴	1,31038e ⁻³	
EvaBelAss	4,33042e ⁻⁴	5,20485e ⁻⁴	6,65568e ⁻⁴	1,47952e ⁻³	1,28941e ⁻³	2,28462e ⁻³

Note. Mean Squared Error (MSE) of the full model (with all variables) = 7,20391e⁻¹¹

The RBE process, guided by the minimization of the MSE at each step, enabled the reduction of the construct from nine to four factors while preserving 92.6% of the variance explained by the original model. The retaining factors proved sufficient to robustly represent the self-leadership index, now composed of 18 items. The criterion of selecting the factor associated with the lowest MSE in each round demonstrated to be an objective and statistically consistent methodology, aligned with best practices in feature selection within ML (Guyon & Elisseeff, 2003; Jain & Zongker, 1997).

4.2 COMPARISON OF SELF-LEADERSHIP INDEXES IN THE FOUR-FACTOR MODEL

Based on the optimized four-factor model, a comparative analysis was conducted to assess how different weighting strategies impact the computation of the self-leadership index. Two versions of the index were calculated: one using the original theoretical weights derived from the number of items per factor (Mod_4F_Ori), and the other using weights based on the relative contribution of each factor as observed in the sixth

and final round of RBE, namely the Δ MSE values (Mod_4F_RBE). This analysis aimed to determine which approach better preserves the structure and interpretability of the original construct while aligning with empirical performance.

The development of a reduced self-leadership index from the optimized model follows principles consistent with feature importance in ML. Specifically, the empirical contribution of each retained factor — expressed through its Δ MSE during the RBE process — was normalized and used as a relative weight. This weighting method reflects the actual impact of each factor on model performance and is widely applied in advanced model optimization practices (Molnar, 2022; Kuhn & Johnson, 2019). Similar strategies are found in feature engineering, model pruning, and ensemble methods such as Random Forests, Gradient Boosting, and neural networks (Breiman, 2001; Guyon & Elisseeff, 2003).

By anchoring the index in empirical importance, the Mod_4F_RBE version incorporates not only the most predictive dimensions but also the relative strength of their influence. This results in a more parsimonious yet informative model, which retains interpretability and predictive utility. Furthermore, the use of Δ MSE as a basis for weighting ensures that the resulting index remains psychometrically meaningful, integrating both theoretical and data-driven insights into self-leadership measurement.

4.2.1 QUALITATIVE ANALYSIS

To assess the consistency between the original nine-factor self-leadership index and the indexes generated by the optimized four-factor model, a categorical comparison was conducted. Each participant's self-leadership score was classified into three ordinal levels: low, medium, and high.

Using the original theoretical weighting structure, the reduced four-factor model produced 27 mismatches across 677 cases, corresponding to an error rate of 3.99%. In

comparison, the optimised model weighted according to the empirical impact of each factor – derived from the Δ MSE values in the final RBE iteration and hereafter referred to as Mod_4F_RBE – produced only 21 classification discrepancies, yielding an error rate of 3.10%.

These results indicate a high degree of agreement between the full and reduced models. Moreover, Mod_4F_RBE exhibited slightly greater consistency with the original construct in terms of categorical classification. This suggests that, for practical applications involving classification or triage (e.g., training diagnostics or developmental feedback), the empirically optimised model offers both predictive precision and categorical reliability.

4.2.2 QUANTITATIVE ANALYSIS

To complement the categorical assessment, a Pearson correlation analysis was performed to quantify the alignment between the different versions of the self-leadership index. Specifically, correlations were calculated among:

- (1) The original nine-factor model (Mod_Ori);
- (2) The four-factor model using theoretical weights (Mod_4F_Ori);
- (3) The four-factor model with empirical weights based on Δ MSE values (Mod_4F_RBE).

Table 3*Pearson correlation table*

		Mod Orig	Mod 4F Orig	Mod 4F RBE
Mod Orig	Pearson Correlation	1	,877**	,934**
	Sig. (2-tailed)		,000	,000
	N	677	677	677
Mod_4F_Ori	Pearson Correlation	,877**	1	,785**
	Sig. (2-tailed)	,000		,000
	N	677	677	677
Mod_4F_RBE	Pearson Correlation	,934**	,785**	1
	Sig. (2-tailed)	,000	,000	
	N	677	677	677

Note. **. Correlation is significant at the 0.01 level (2-tailed).

The results revealed very strong correlations between the original model and both reduced versions: $r = .877$ for the model using theoretical weights (Mod_4F_Ori) and $r = .934$ for the empirically optimised model (Mod_4F_RBE) ($p < .001$ in both cases). These findings suggest that the reduced structure effectively preserves the core of the self-leadership construct. Notably, Mod_4F_RBE exhibited the highest correlation with the original index, indicating superior performance in terms of predictive precision – further validating the utility of ML techniques in identifying the most impactful predictors.

Although both reduced models retain substantial explanatory power, Mod_4F_RBE shows slightly greater numerical fidelity to the original construct. It also produced fewer classification discrepancies, reinforcing the idea that empirical weighting enhances both predictive accuracy and categorical reliability. Consequently, Mod_4F_RBE emerges as the most robust and versatile solution for practical applications, combining parsimony, precision, and theoretical coherence.

4.2.3 COMPARATIVE CONCLUSION OF THE FOUR-FACTOR SELF-LEADERSHIP INDEXES

The data indicate that for classification purposes – such as diagnosis, screening, or identifying training needs – the empirically optimised model (Mod_4F_RBE) is more suitable, as it yielded fewer discrepancies in categorizing individuals into “low,” “medium,” or “high” self-leadership levels. In contrast, the model using the original theoretical weights (Mod_4F_Ori), while conceptually aligned with the initial structure, resulted in a higher classification error.

When the objective is to obtain a continuous and more precise estimate of the self-leadership index – for instance, in individual monitoring or longitudinal tracking – both models demonstrate strong correlations with the full structure. However, Mod_4F_RBE offers superior predictive robustness and numerical fidelity.

Accordingly, Mod_4F_RBE emerges as the most effective and versatile solution for applied contexts. These findings illustrate how traditional psychometric frameworks can be successfully combined with contemporary ML techniques, enabling the constructive optimisation of assessment tools while preserving theoretical coherence.

4.3 SYNTHESIS OF THE INTERPRETATION OF RESULTS

As outlined in Table 2, the factors SelfPun, NatRew, VisSuccPerf, and EvaBelAss emerged as the strongest predictors of self-leadership. Systematically eliminating the remaining five factors reduced model complexity from 35 to 18 items, while preserving 92.6% of the variance explained by the original construct—demonstrating that explanatory power was largely retained despite scale reduction.

Comparative analyses of self-leadership index calculations showed that the empirically optimised model (Mod_4F_RBE) produced the fewest classification discrepancies and the highest correlation with the full structure. This indicates that Mod_4F_RBE offers

superior performance both in categorical classification and in continuous predictive estimation.

These findings confirm the utility of Recursive Backward Elimination (RBE) in the social sciences. The method enabled the construction of a shorter, efficient, and empirically validated instrument, with applicability in educational and organisational settings. It proved not only computationally sound but also capable of optimising psychometric tools without compromising theoretical coherence.

Compared to the nine-item ASLQ developed by Houghton et al. (2012), which condenses the RSLQ along its original dimensions, the present four-factor model (Mod_4F_RBE) retains more predictive power ($R^2 = 0.926$) by leveraging a performance-driven ML approach. This highlights the added value of empirical feature selection in preserving the explanatory richness of the original construct.

In sum, this study introduces a refined self-leadership model that remains faithful to its theoretical foundations while addressing practical challenges in psychological assessment. The proposed Mod_4F_RBE structure is both psychometrically robust and operationally efficient, offering a viable alternative for agile and targeted evaluation.

5. CONCLUSION

This study investigated the application of ML techniques – specifically Recursive Backward Elimination (RBE) supported by Artificial Neural Networks (ANNs) – to optimise the assessment of self-leadership in a military training context. Starting from the original nine-factor structure grounded in the theoretical framework of Neck and Manz, the model was progressively reduced through six elimination rounds, ultimately yielding a streamlined version composed of four key factors and 18 items. Despite this substantial reduction, the optimised model preserved high predictive performance ($R^2 = 0.926$), confirming that it is possible to simplify the evaluative process without

compromising measurement validity.

Comparative analyses between the original and reduced models further validated the new construct. When using empirical weights derived from the RBE procedure, the reduced model – hereafter referred to as Mod_4F_RBE – resulted in only 3.10% classification discrepancies and demonstrated a strong Pearson correlation with the full model ($r = .934$). These results underscore the robustness and fidelity of Mod_4F_RBE, supporting its use in contexts that require operational efficiency without sacrificing psychometric rigour.

Beyond the immediate findings, this research illustrates the growing relevance of ML methods in the social and behavioural sciences. By integrating computational modelling with classical psychometric frameworks, this study offers a replicable and empirically grounded pathway for construct optimisation. Such integration enhances both theoretical robustness and practical utility, particularly in domains such as leadership assessment and training design.

Nonetheless, some limitations must be acknowledged. The sample, although substantial ($n = 677$), is drawn from a single military academy, which may constrain the generalisability of the findings. Additionally, while the optimisation process prioritised predictive accuracy and parsimony, it did not yet address issues such as longitudinal stability or cross-cultural invariance. Future studies are encouraged to test the applicability of Mod_4F_RBE across diverse contexts, populations, and over time. In conclusion, this work proposes a practical and scientifically robust tool – Mod_4F_RBE – for assessing self-leadership in military environments. It also contributes to a broader methodological dialogue, demonstrating how ML techniques can be meaningfully employed to enhance the development, refinement, and applicability of psychological instruments in real-world settings.

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Theme III – Military Leadership and Human Challenges

RISK AND PROTECTIVE FACTORS AGAINST PTSD IN PORTUGUESE PEACEKEEPERS: A QUALITATIVE STUDY PROTOCOL

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ABSTRACT

Peacekeepers often face physical and psychological stressors that can lead to post-traumatic stress disorder (PTSD). However, not all develop PTSD, and the factors influencing this variability remain unclear. Objective: Guided by the Conservation of Resources theory, this qualitative study explores risk and protective factors influencing peacekeepers' experiences of potentially traumatic events during deployment, which may contribute to PTSD. Methods: Semi-structured interviews are being conducted with 32 Portuguese Defense Forces peacekeepers deployed to Bosnia (1996; 2006-2007), Afghanistan (2008; 2014), the Central African Republic (2017; 2019) and Romania (2022; 2023-2024). These missions were selected for their diverse geographical, socio-political, and operational contexts, offering a broad spectrum of experiences for analysis. They also reflect key phases in Portuguese peacekeeping, capturing evolving challenges. Additionally, they encompass varying stressors, from

post-conflict stabilization (Bosnia) to counterinsurgency (Afghanistan), peace enforcement (Central African Republic) and training missions (Romania), making them relevant to PTSD research. The study received ethical approval from the University of Lisbon's Research Ethics Committee. The interview schedule, comprising open-ended questions, was reviewed by the Portuguese Army Applied Psychology Center and piloted with two Army members. Interviews are being conducted via Google Meet, recorded with OBS Studio, and transcribed verbatim. Thematic analysis using NVivo (v12) is being used to identify risk and protective factors. Preliminary Results: sixteen interviews with peacekeepers deployed to Bosnia and Romania revealed key protective factors against PTSD, including social support, military values, preparation, personal fulfillment, and adaptive coping strategies. Identified risk factors included adverse operational conditions, separation from home, strained relationships, and maladaptive coping mechanisms. Findings enhance understanding of PTSD in peacekeeping, support the development of an instrument to analyze risk and protective factors, and inform evidence-based recommendations for deployed personnel's mental health.

Keywords: military, peacekeepers, peacekeeping, post-traumatic stress disorder, PTSD.

1. INTRODUCTION

Post-Traumatic Stress Disorder (PTSD) is a psychological condition that arises after an individual experiences or witnesses a traumatic event. This disorder typically develops in response to highly stressful or traumatic experiences that deeply affect a person's mental and emotional state. PTSD can be triggered by a wide range of traumatic events, and its onset is often directly linked to the severity and nature of the

event itself (Coenen et al., 2021; Nash et al., 2014). Such events can include combat, natural disasters, or violent personal attacks.

Although a significant number of Portuguese military personnel have been deployed on non-war missions over the years, there is a notable research gap concerning the prevalence of PTSD among these individuals. To date, no studies have examined the rates of PTSD in Portuguese personnel involved in non-war operations or identified the risk and protective factors that might contribute to the development of PTSD in these military personnel. Conducting such research is vital for developing targeted prevention and intervention strategies for PTSD, which would not only improve the mental health and well-being of Portuguese military personnel but also enhance the overall effectiveness and success of non-war missions. By addressing this gap in research, we can better understand the psychological challenges faced by Portuguese military personnel and create solutions that promote resilience and mental health during and after deployment.

The focus of this research is to identify potential risk and protective factors associated with PTSD among Portuguese military personnel in non-war operations. The factors identified in this study will be used to develop a comprehensive instrument of factors that relate (both positively and negatively) with PTSD. Theoretically, the study seeks to contribute to the extension and consolidation of knowledge about PTSD in military personnel involved in non-war operations. Practically, the research aims to contribute to organizational practices by gathering conditions for interventions that protect military personnel from risk factors and provide them with protective resources against PTSD.

2. LITERATURE REVIEW

2.1 PTSD IN COMBAT CONTEXTS

Research in the field of traumatic stress has significantly explored the relationship between exposure to combat situations and the development of PTSD. It has been consistently found that military service acts as a considerable risk factor for the development of various psychiatric disorders, with PTSD being one of the most common among them (Greenberg et al., 2008; Maia et al., 2011). The experience of war or combat often plays a crucial role in the development of PTSD, with the intense and frequent exposure to trauma taking a severe psychological toll on military personnel (Maia et al., 2011; Xue et al., 2015). Meta-analyses of military personnel highlight the troubling prevalence of PTSD in groups serving in war zones (Coenen et al., 2021; Xue et al., 2015). For example, studies on U.S. military personnel deployed to combat zones report that PTSD rates vary widely, ranging from as low as 8.8% to as high as 25%, depending on various factors such as the specific branch of the military and the location of deployment (Booth-Kewley et al., 2010; Chemtob et al., 1990; Espinoza, 2010; Hing et al., 2012; Hoge et al., 2004). This wide range of PTSD rates underscores the complexity of factors involved in the disorder's development and suggests that individual experiences and the nature of military service significantly influence the likelihood of developing PTSD. Research also indicates that the severity of PTSD symptoms often correlates with the intensity of combat experiences (Fear et al., 2010; Hoge et al., 2004).

2.2 PTSD IN NON-WAR MILITARY OPERATIONS

An interesting and somewhat surprising finding is that military personnel involved in international non-war operations, such as peacekeeping and peace enforcement missions, often face similar types of traumatic stressors as those experienced by

soldiers in conventional warfare. These stressors can include witnessing the aftermath of violent conflicts, seeing corpses, experiencing threats of violence, and even being targeted by the very communities they are assigned to protect. Despite not being engaged in active combat, these personnel can be exposed to intense emotional and psychological pressures (Greenberg et al., 2008). The increasing success of such missions has, however, raised the expectations placed on these troops. As peacekeeping operations become more widespread, military personnel are now required to perform complex tasks in volatile and unpredictable environments that often involve handling political instability and potentially dangerous situations (United Nations Peacekeeping, n.d.). As a result, peacekeeping personnel are frequently exposed to a combination of physical threats and psychological stressors, which can take a toll on their mental health and well-being. This can lead to conditions such as PTSD, anxiety, depression, and substance abuse, further complicating their ability to carry out their missions effectively and impacting their overall preparedness and mental resilience (Greenberg et al., 2008).

PTSD rates among military personnel in non-war operations are comparable to those in combat zones like Iraq, Afghanistan, and the Persian Gulf (Magruder & Yeager, 2009). PTSD prevalence in non-war operations can range from 0.05% to as high as 25.8% (Souza et al., 2011), indicating that the psychological impacts of these operations can be significant. However, it is essential to note that not all military personnel engaged in non-war missions develop PTSD. PTSD prevalence in these groups can vary significantly, and studies have found that the rates range from 2% to 15% in Western countries (Greenberg et al., 2008). This variation leads to an important question: why do some military personnel involved in non-combat operations develop PTSD, while others do not? This question underscores the need for further research into the specific risk and protective factors that might influence the development of

PTSD in such contexts. Understanding these factors is crucial to providing better care and support for military personnel who may be at risk. Therefore, a recent systematic review and meta-analysis (Carmona et al., 2024) examined risk and protective factors for PTSD in peacekeepers, identifying risk factors such as single marital status, female gender, serving in infantry, longer time since deployment, negative perceptions about deployment, combat/trauma exposure, deployment stressors, and negative social interactions, while protective factors included family/community and military support, higher education, higher rank, problem-focused coping strategies, and older age.

2.3 THEORETICAL FRAMEWORK

The Conservation of Resources (COR) Theory, developed by Hobfoll (2002), offers a framework for understanding how individuals respond to stress and the role that resources — such as objects, personal traits, and physical, psychological, and social conditions — play in managing life's challenges. The theory asserts that resources are essential for coping with stress, and when they are depleted, individuals become vulnerable to further stress. This resource depletion can create a negative feedback loop, worsening stress and leading to further loss of resources. On the other hand, the accumulation of resources fosters resilience and improves well-being by enhancing the ability to cope with stress.

In relation to PTSD, COR Theory suggests that the loss of critical resources —whether personal (e.g., self-esteem, emotional stability) or situational (e.g., support systems, stability) — increases vulnerability to trauma. PTSD does not stem solely from exposure to trauma but from the loss of resources and the inability to replenish them. However, maintaining or accumulating resources, such as strong social support and effective coping mechanisms, can help mitigate PTSD by promoting resilience. COR Theory is particularly relevant in understanding PTSD among military personnel in

non-war operations, such as peacekeeping or humanitarian missions, where unique stressors — e.g., emotional exhaustion, isolation, and exposure to traumatic events — can deplete resources. If these resources are not replenished, military personnel become more vulnerable to stress-related disorders, including PTSD.

The theory's focus on resource management is crucial in developing mental health interventions for military personnel. By identifying risk and protective factors, COR Theory informs strategies to provide emotional support, improve coping skills, and ensure personnel can maintain or accumulate resources. This helps prevent PTSD and supports military performance in challenging environments. Overall, COR Theory highlights the importance of safeguarding psychological well-being and improving resilience among military personnel, especially in non-combat settings.

3. METHODS

This study involves conducting one-on-one, semi-structured interviews with 32 peacekeepers from the Portuguese Defense Forces who were deployed to various international missions, including Bosnia (1996; 2006-2007), Afghanistan (2008; 2014), Central African Republic (2017; 2019), and Romania (2022; 2023-2024). These specific deployments were selected for several reasons: first, they represent a broad spectrum of mission contexts, each characterized by distinct geographical locations, socio-political environments, and operational demands. This variety offers a diverse range of experiences that can enrich the analysis. Second, these missions are historically significant, reflecting various phases and challenges faced by Portuguese peacekeepers over the years, which adds valuable depth to the study. Third, the different nature of these operations — ranging from post-conflict stabilization in Bosnia, to counterinsurgency efforts in Afghanistan, peace enforcement in the Central African Republic, and training missions in Romania — provides a wide array of

stressors. These diverse experiences make these missions particularly relevant to the study of PTSD in peacekeepers.

The interviews are designed to address a central research question: What are the risk and protective factors against post-traumatic stress disorder (PTSD) in army peacekeepers? To the best of our knowledge, this research represents the first study of its kind focusing on Portuguese peacekeepers. The participants are being recruited from the Portuguese Defense Forces through a protocol established between the Faculty of Psychology at the University of Lisbon and the Portuguese General Directorate of National Defense Resources. The recruitment process, carried out by the Portuguese Army Applied Psychology Center, began by reaching out to commanders via email to request the orders of battle. Once these orders were received, potential participants were contacted by email and invited to participate in the study. Inclusion was based on the condition that participants had served in one of the specified international deployments: Bosnia (1996; 2006-2007), Afghanistan (2008; 2014), Central African Republic (2017; 2019), or Romania (2022; 2023-2024). No additional exclusion criteria were applied. Those who agree to participate are provided with an overview of the study before the interviews begin, and all participants give their informed consent to take part. Ethical approval for the study was granted by the Research Ethics Committee of the Scientific Committee of Faculty of Psychology of University of Lisbon. Participation is voluntary and confidential, ensuring that only the research team had access to the data collected.

The interview process was guided by a semi-structured interview schedule, which was designed to explore the lived experiences of the peacekeepers in relation to their time in these missions. This format allowed for flexibility, ensuring that each interview could be tailored to the individual's unique experiences. To ensure the interview questions were both relevant and appropriate, the schedule was reviewed and critiqued

by members of the Portuguese Army Applied Psychology Center. After incorporating their feedback, the schedule was piloted with two Army personnel who had operational experience. Final adjustments were made based on this pilot before proceeding with the actual interviews. The interview schedule consisted of 15 broad, open-ended questions, each with prompts to guide the interviewer in eliciting detailed responses.

Table 1

Interview Script

Interview Domain	Items
Demographic Information (current and at the time of deployment)	Date of birth Marital status Education level Length of military service Rank/position held Permanent staff or contract? If under contract, how much time remained until the contract ended at the time of deployment? Were you deployed voluntarily or by assignment? What was your perception of going on the mission?
Experiences in the Peacekeeping Mission	General description of the peacekeeping mission Moments or situations that were particularly challenging or stressful during the mission. Were there any events or situations that, from your perspective, could be classified as potentially traumatic during the mission?
Identifying Protective Factors Against PTSD	Pre-Mission During Missions Post-Missions Other missions
Final reflections	From your perspective, considering both your personal experience and what you have observed in other military personnel, what would you say about the impact of participating in these missions on mental health? What would you recommend for the selection and recruitment of military personnel for these missions? What recommendations would you make regarding the support provided by the military before, during, and after the mission?
Conclusion	Reiterate the commitment to confidentiality and formally conclude the interview

Interviews are being conducted using Google Meet, recorded with OBS Studio software, and transcribed verbatim for analysis. The duration of each interview is circa

one hour. All interviews are being conducted by the lead author, who has no military background. This lack of military experience is being disclosed to all participants at the outset. At the conclusion of each interview, participants complete the Portuguese version (Carvalho et al., 2020) of the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013), which provides a standardized measure of PTSD symptoms.

Following the interviews, the audio recordings are transcribed into Microsoft Word documents. The data analysis is being carried out using NVivo (v12), employing a reflexive thematic analysis approach in line with the guidelines established by Braun and Clarke (2006). The analysis process is systematic and involves several stages. Initially, the research team thoroughly familiarizes themselves with the interview transcripts by reading and re-reading the data. This close engagement with the material enables the generation of initial codes, which are then grouped together to form broader categories. During this process, particular attention is being paid to the relationships between the codes, allowing the team to identify patterns and organize the data into coherent categories.

Once the initial categories are formed, the research team reviews them to assess their validity. This involves evaluating whether the categories could stand alone, needed to be combined with others, or should be discarded altogether. The final step involves refining the categories into overarching “domain categories,” which represent key themes in the data. These domain categories provide the structure for interpreting the findings of the study. Throughout the analysis, the research adheres to a social constructivist epistemological approach, acknowledging that each participant's experience of trauma and its psychological effects are shaped by their unique social realities and personal contexts.

4. PRELIMINARY RESULTS

Data collection is ongoing. Sixteen interviews were conducted and analyzed with participants from Bosnia and Romania. Among the most relevant protective factors were social support (military psychological support, camaraderie, family support); military values (being a soldier, duty, sacrifice and responsibility), selection/preparation (selection, personal preparation and previous military experience, military preparation for the deployment), fulfillment (personal growth, pride/achievement, enjoyment/motivation), and coping strategies (adaptive coping strategies, rest/relaxation). On the other hand, the risk factors include adverse conditions (conflict and danger scenarios, insufficient resources, stress and pressure, isolation and restrictions, unknown and unpredictability), distance from Portugal (being far from home and family, issues related to returning to normal life, concerns about and from family), relational challenges (bad or overwhelming relationships, negative leadership), coping strategies (maladaptive coping strategies).

Table 2

Preliminary results

Domain	Theme (node)	Subcategories (sub-nodes)
Protective factors	Social Support	Military psychological support, camaraderie, family support
	Military Values	Being a soldier, sense of duty, responsibility, sacrifice
	Selection and Preparation	Selection, personal preparation and prior military experience, military training for the deployment
	Fulfillment	Personal growth, pride/ achievement, motivation/ enjoyment
	Coping strategies	Adaptive coping strategies, rest, and relaxation practices
Risk factors	Adverse conditions	Conflict and danger, insufficient resources, stress and pressure, isolation and restrictions, unknown, unpredictability
	Distance from Portugal	Being far from home and family, issues related to returning to normal life, concerns about and from family
	Relational challenges	Negative leadership, bad or overwhelming relationships
	Coping strategies	Maladaptive coping strategies

5. DISCUSSION

This study discusses preliminary qualitative findings regarding the risk and protective factors influencing the development of PTSD among Portuguese peacekeepers, aiming to deepen the understanding of how individual, social, and contextual resources affect mental health outcomes during and after deployment.

Some factors had already been shown in previous studies. Institutional military social support (Barnes et al., 2013), military leaders and peers' support (Bolton et al., 2003; Mehlum & Weisaeth, 2002), problem-focused coping (Dirkzwager et al., 2003), rest and recovery opportunities (Gjerstad et al., 2020), and community and family reception (Bolton et al., 2002) are significantly linked to lower PTSD in peacekeepers. Growth is also linked, but not significantly (Goede et al., 2024). On the contrary, exposure to combat/war zones (e.g., Bolton et al., 2002; Bolton et al., 2003; Bolton et al., 2006; Connorton et al., 2011; Dickstein et al., 2010; Di Nicola et al., 2007; Gray et al., 2004; Litz et al., 1997; Mehlum et al., 2006; Sareen et al., 2007), stress and pressure (e.g., Mehlum et al., 2006; Richardson et al., 2007; Seedat et al., 2003), emotion-focused coping (Dirkzwager et al., 2003), being away from home and family (Orme & Kehoe, 2014), and difficulties in social reintegration after returning (Mehlum et al., 2006) are significantly linked to higher PTSD in peacekeepers. In military personnel, low motivation for military service influences vulnerability for PTSD (Kaplan et al., 2002). Prior experience shows mixed results: while the 1st deployment is linked to higher PTSD (Adler et al., 2005), and multiple deployments (Dirkzwager et al., 2005) are linked to lower PTSD, peacekeepers deployed more than once have a higher likelihood of PTSD (Richardson et al., 2007). However, some factors have not yet been explored in peacekeepers, such as military values; fulfillment; selection/preparation; concerns about and from family; and adverse conditions such as insufficient resources, isolation and restrictions, and unknown and unpredictability.

These preliminary findings reinforce the applicability of the Conservation of Resources (COR) theory in understanding PTSD among peacekeepers. The theory suggests that traumatic stress arises from the loss of resources and the inability to recover them, with the presence or absence of personal, social, and contextual resources directly impacting individuals' mental health. The data validate this premise, showing that elements such as social support, effective leadership, and adaptive coping strategies act as essential protective resources, whereas stress exposure, isolation, and reintegration challenges represent forms of resource loss with a negative psychological impact. This study also highlights the importance of contextual variables such as mission environment, the role performed, and post-deployment conditions, suggesting that effective interventions must occur before, during, and after the mission. Attention to relational and contextual factors — such as camaraderie and moments of relaxation — may play a crucial role in preventing PTSD. Additionally, the findings provide a strong foundation for future quantitative studies and may help guide military policies and practices regarding psychological preparation and support for deployed personnel. Attending to both individual (e.g., coping strategies) and contextual (e.g., institutional support) factors emerges as essential for mitigating the psychological impact of peacekeeping missions.

6. CONCLUSION

In conclusion, this research aims to provide a deep understanding of the risk and protective factors that affect PTSD development among Portuguese peacekeepers. By utilizing semi-structured interviews and a robust data analysis method, the study will contribute valuable insights into the mental health challenges faced by military personnel deployed in international peacekeeping missions. The findings will offer a clearer understanding of how diverse operational experiences and personal resources

influence the likelihood of PTSD, thereby informing future strategies for supporting the mental health and well-being of peacekeepers.

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SERVANT LEADERSHIP, PSYCHOLOGICAL EMPOWERMENT AND WORK ENGAGEMENT: A CASE STUDY IN THE PORTUGUESE AIR FORCE

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ABSTRACT

This study focuses on the role of psychological empowerment in the relationship between servant leadership and work engagement among military personnel of the Portuguese Air Force. This case study employed a quantitative methodology through the administration of a questionnaire to the entire population of the Portuguese Air Force (including officers, sergeants, enlisted personnel, civilians, and trainees), resulting in a total sample of $n=499$. The questionnaire included the Servant Leadership Survey, the Psychological Empowerment Scale and the Work and Well-Being Survey to evaluate work engagement. The results indicated that the three variables are significantly and positively correlated, and that Psychological Empowerment is an effective mediator in the relationship between Servant Leadership and Work Engagement, mediating this relationship by 74%. The contribution of this research lies in the empirical evidence provided regarding the role of Psychological Empowerment as a mediator in the relationship between Servant Leadership and Work Engagement within a military context. Additionally, it aims to expand the empirical understanding of the concept of Servant Leadership, which remains limited within the Portuguese population and even more so in the military setting.

Keywords: Servant Leadership; Psychological Empowerment; Work Engagement; Mediation Model.

1. INTRODUCTION

In modern society, there is a growing trend towards the progressive adoption of technological innovations, which requires organizations to acquire greater agility and adjust their responsiveness to keep pace with the current rapid pace. This organizational agility can be achieved through effective leadership and transformation of culture and management (Petermann & Zacher, 2020).

Leadership has been highlighted as an essential element for both employee engagement (Koveshnikov et al., 2020; Mazzetti & Schaufeli, 2022) and for strengthening their commitment to the organization (Rahmadani et al., 2020). Servant leadership is a style of leadership that emphasizes the ability of servant leaders to empower and promote the development of individuals while holding them accountable for the outcomes of their actions. Both servant leadership and psychological empowerment are considered effective ways to improve employee work engagement and reduce turnover intentions (Hunning et al., 2020; Islamy et al., 2023; Moreno et al., 2021). Given the relationships found between these concepts in the literature, this study established the following Central Research Question (CRQ): What is the relationship between Servant Leadership, Psychological Empowerment, and Work Engagement among military personnel and civilians of the Portuguese Air Force?

Thus, the General Objective (GO) is to analyze the relationship between Servant Leadership, Psychological Empowerment, and Work Engagement among military personnel and civilians in the Portuguese Air Force.

From this general objective, four specific objectives (SO) are derived:

SO1 - Analyse the correlation between servant leadership and work engagement;

SO2 - Analyse the correlation between servant leadership and psychological empowerment;

SO3 - Analyse the correlation between psychological empowerment and work engagement;

SO4 - Determine whether the relationship between servant leadership and work engagement is mediated by psychological empowerment.

2. LITERATURE REVIEW

2.1 LEADERSHIP

In the 21st century the focus has shifted towards increasing motivation and social responsibility to ensure success and profit in today's organizations (Dierendonck & Nuijten, 2011; Kunz, 2020). Leadership has been identified as a crucial factor for employee engagement (Luthans, 2002; Mazzetti & Schaufeli, 2022) and for their commitment to the organization (Rahmadani et al., 2020).

In this context, servant leadership emerges as a leadership style that, compared to others, shares several similarities with transformational leadership but primarily differs by going beyond the motives of leaders or followers (Barbuto, 2006).

In a military context, the dichotomy between the concepts of command and leadership is noteworthy. Although related and sometimes confused, they present significant differences. The concept of command is based on a rigid hierarchical structure, where orders are transmitted with the expectation of immediate and unquestioning execution (Wong et al., 2003). In contrast, leadership focuses on the motivation and engagement of subordinates, promoting a sense of purpose and commitment.

In the military environment, leaders are expected to demonstrate flexibility and the ability to adapt to changes, encouraging innovation and strengthening the resilience of their teams (Millet et al., 1986).

2.2 PSYCHOLOGICAL EMPOWERMENT

Psychological empowerment can be defined as a multifaceted construct that encompasses dimensions such as a perceived sense of control, competence, and internalization of goals, integrating a proactive approach to life, critical thinking about the socio-political context, and a perception of personal control (Oladipo, 2009; Zimmerman, 1995).

A positive and significant association between servant leadership and psychological empowerment has already been established in the literature (Ghalavi & Nastiezaie, 2020; Van der Hoven et al., 2021).

Psychological empowerment has also been identified as a mediator in the relationship between servant leadership and other variables, such as organizational citizenship behaviors (Ghalavi & Nastiezaie, 2020), innovative work behavior (Faraz et al., 2019), and work engagement under conditions of high uncertainty (De Sousa & Van Dierendonck, 2014).

2.3 WORK ENGAGEMENT

According to Schaufeli et al. (2006), work engagement is described as a positive and fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption. This engagement in work is related to the physical and psychological well-being of employees, as highlighted by Kahn (1990). Worker engagement is generally described by three main dimensions: vigor, dedication, and absorption (Schaufeli et al., 2002). Vigor refers to the energy and resilience employees exhibit in their

activities, as well as their willingness to persist even in the face of challenges (Schaufeli et al., 2006). Dedication is defined as "a sense of significance, enthusiasm, inspiration, pride, and challenge" (Schaufeli et al., 2002, p.74). Finally, absorption is the state of total concentration and immersion in work, where time passes quickly and the employee has difficulty detaching from their tasks (Schaufeli et al., 2002, p.75).

As a process of continuous improvement, there will be moments when employees do not feel engaged in their tasks. To prevent this, it is important for organizations, teams, and individuals to remain vigilant and be capable of continuously improving the work environment over time (Bakker, 2022). In this context, the role of leadership is crucial in its relationship with employee engagement, and proven to be positively correlated (Jiang et al., 2020).

2.4 RESEARCH HYPOTHESES

Several studies indicate that managers exhibiting servant leadership behaviors can enhance employee work engagement through a culture of support and collaboration, as demonstrated by De Sousa and Van Dierendonck (2014), and that the same occurs in military contexts as presented by Moreno et al. (2021). Additionally, the perceived meaning associated with servant leadership plays a mediating role in its positive effects on work engagement, strengthening the relationship between this leadership style and the level of employee work engagement (Khan et al., 2021). In the work conducted by Vrcelj et al. (2022), their results suggest that military personnel led by servant leaders exhibit higher levels of job satisfaction compared to those working under traditional leadership styles. Given this, the following hypothesis is formulated:

H1: The adoption of a servant leadership style by management is positively correlated with the work engagement of military personnel.

Servant leaders promote the psychological empowerment of their followers by granting them autonomy and stimulating individual initiative, thus contributing to the strengthening of their psychological empowerment (Tripathi et al., 2021). Servant leadership establishes a favorable work environment that supports the emotional health and well-being of military personnel. This supportive climate strengthens morale and resilience, both crucial elements for effectiveness in military operations (Jit et al., 2017). This satisfaction is particularly important in military environments, where professionals face specific challenges and pressures inherent to the military condition (Jiang, 2024). Considering the arguments presented and various studies on this relationship of concepts (Jiang, 2024; Jit et al., 2017; Tripathi et al., 2021; Vickery et al., 2021), the following hypothesis is formulated:

H2: The adoption of a servant leadership style by management is positively correlated with the psychological empowerment of military personnel.

Psychological empowerment significantly contributes to professional outcomes, demonstrating that when employees feel empowered, they exhibit greater work engagement and dedication (Macsinga et al., 2015). A high level of psychological well-being is directly related to increased work engagement, indicating that mentally healthy and fulfilled employees tend to demonstrate greater involvement and commitment in their tasks (Islamy et al., 2023). In the military context, when professionals recognize that their contributions influence organizational outcomes, job satisfaction is significantly enhanced (Deepak, 2024). The ability to make autonomous decisions and manage their own tasks is essential for promoting job satisfaction among military personnel (Wang & Lee, 2009). Considering the above as well as various studies on this relationship of concepts (e.g., Dealisa & Widodo, 2024; Deepak, 2024; Islamy et al., 2023; Juyumaya, 2022; Macsinga et al., 2015; Qatrunnada & Parahyanti, 2019; Wang & Lee, 2009), the following hypothesis is formulated:

H3: The psychological empowerment of military personnel is positively correlated with their work engagement.

The concept of psychological empowerment encompasses essential factors for intrinsic motivation, functioning as a mediator between leadership styles and work engagement (Qatrunnada & Parahyanti, 2019). Furthermore, the authors mention that empowered individuals tend to demonstrate deeper engagement in their activities. De Klerk and Stander (2014) point out that psychological empowerment can act as a partial mediator in the link between servant leadership and work engagement. Although it has been included as a mediating variable in multiple recent studies (De Sousa & Van Dierendonck, 2014; Faraz et al., 2019; Ghalavi & Nastiezaie, 2020), psychological empowerment had not, until now, been extensively studied as a mediator in the relationship between servant leadership and the work engagement of military personnel. Therefore, considering the above, the following hypothesis can be formulated:

H4: There is a mediating effect of psychological empowerment in the relationship between the adoption of a servant leadership style by management and the work engagement of military personnel.

3. DATA, METHOD, AND VARIABLES

Given the nature and objective of this study, a questionnaire survey was chosen for data collection. The method used for this study was the hypothetical-deductive method (Creswell and Guetterman, 2018). The data were processed using the Statistical Package for the Social Sciences (SPSS) version 29.

3.1 DATA

The target population for this research consisted of all military and civilian personnel serving within the organizational structure of the Portuguese Air Force (FA): officers (from the rank of Cadet to Colonel), sergeants, enlisted personnel, civilians, and trainees (students of the Air Force Academy). The administration of the questionnaire began on July 16, 2024, and ended on October 16, 2024. Of the 516 questionnaires received, 17 were excluded (seven declined to participate in the study and ten were due to incorrect completion). The final sample ($n=499$) is characterized by military and civilian personnel with an average age of 35.77 years, ranging from 18 to 64 years old ($SD=11.66$). The population is divided into 65.9% male and 34.1% female.

3.2 CHARACTERIZATION OF THE DATA COLLECTION INSTRUMENT

The instrument used in this research was a questionnaire survey divided into four distinct sections. The first section consists of questions characterizing the sample (age, gender, rank, specialty, length of service). The second section used the Servant Leadership Survey developed by Van Dierendonck et al. (2017). The third section used the Psychological Empowerment Scale developed by Spreitzer (1995). The fourth section applied the Work and Well-Being Scale developed by Schaufeli et al. (2006). The response format was closed, using a Likert scale response format ranging from "Strongly disagree" (1) to "Strongly agree" (6) for servant leadership. For psychological empowerment, the scale ranged from "Strongly disagree" (1) to "Strongly agree" (7). Schaufeli et al. (2006) developed the Work and Well-Being Scale, a 17-item scale to measure work engagement. A closed Likert-type response format of 7 points was used, ranging from "Never/None at all" (0) to "Always/Every day" (6).

4. RESULTS

4.2 CORRELATIONAL ANALYSIS

A correlational analysis was conducted among the different variables with the aim of measuring the intensity and direction of their relationships. For this purpose, the Pearson correlation coefficient was used, which precisely evaluates this aspect. According to Marôco (2014), this coefficient ranges from -1 to +1, indicating whether the variables change in the same direction (positive relationship) or in opposite directions (negative relationship). The correlations above 0.9 indicate a very strong correlation, between 0.7 and 0.9 indicate a strong correlation, between 0.5 and 0.7 moderate and between 0.3 and 0.5 weak. From the analysis of Table 1, it is possible to verify that all correlations are significant and positive ($p < 0.01$). It is also evident that the highest correlation occurs between the variables Psychological Empowerment and Work Engagement with a moderate correlation (0.690).

Table 1

Correlational analysis between variables

Variable	1	2	3
1. Servant Leadership	-		
2. Psychological Empowerment	0.525**	-	
3. Work Engagement	0.445**	0.690**	-
Note. n =499, ** $p < 0.01$ the correlation is significative (2 extremities)			

4.2 LINEAR REGRESSION

Linear regression Stepwise was conducted to confirm the effect of psychological empowerment and servant leadership in the work engagement. The models are valid and without restrictions.

Table 2 allows us to infer that servant leadership and psychological empowerment contribute 48.6% to the explanation of the variance in work engagement.

Table 2

Summary of the mediation model

Model	R	R square	R adjusted square	Standard Estimate Error	Durbin-Watson
1 ¹	0.445 ^a	0.198	0.197	1.16	
2 ²	0.697 ^b	0.488	0.484	0.93	1.90

Notes. ¹ Predictors: (Constant), Servant Leadership
² Predictors: (Constant), Servant Leadership, Psychological Empowerment

4.4 MEDIATION MODEL – WORK ENGAGEMENT

To examine the mediating role of psychological empowerment in the relationship between servant leadership and work engagement, a mediation model was tested using the PROCESS macro (v. 4.2.0) for SPSS, employing Model 4 (Hayes, 2018). To assess indirect effects, 95% bootstrap confidence intervals were applied, based on 5000 bootstrap resamples (Hayes, 2018). The data were also checked for linear model assumptions. Overall, the histogram and P-P plots did not reveal significant violations of normality and homoscedasticity assumptions. Additionally, assumptions of multicollinearity ($VIF < 5$; $Tolerance > 0.02$) and autocorrelation among residuals (Durbin-Watson values close to two) were met (Hayes, 2018).

To analyze the indirect effects of psychological empowerment in the relationship between servant leadership and work engagement, a mediation model was tested through path analysis. The results reveal a positive and significant association between servant leadership and psychological empowerment ($\beta = 0.4650$; $t = 13.76$; $p < 0.0001$, 95% CI [0.3981, 0.5314]; $R^2 = 0.276$), indicating that higher levels of servant leadership are associated with higher levels of psychological empowerment. A positive

and significant association was also observed between psychological empowerment and work engagement ($\beta = 0.8257$; $t = 16.67$; $p < 0.0001$, 95% CI [0.7283, 0.9230]; $R^2 = 0.4861$), meaning that higher levels of psychological empowerment are associated with higher levels of work engagement.

The aim was to investigate the extent to which psychological empowerment mediates the relationship between servant leadership and work engagement. The mediation effect (indirect effect) was significant $\beta = 0.3839$ (95% BCa CI = 0.3054, 0.4672). The psychological empowerment variable mediated approximately 74.42% of the relationship between servant leadership and work engagement. Additionally, the total effect (c) of servant leadership on work engagement is significant ($\beta = 0.5160$; $t = 11.08$; $p < 0.0001$, 95% CI [0.4245, 0.6074]; $R^2 = 0.1982$), as well as its direct effect (c') ($\beta = 0.1320$; $t = 3.0116$; $p < 0.01$, 95% CI [0.0459, 0.2182]; $R^2 = 0.4861$). In other words, the results show a direct association of servant leadership on work engagement, even considering the mediating effect of psychological empowerment. Thus, the observed indirect effect represents a partial mediation by psychological empowerment, indicating that only part of the impact of servant leadership on work engagement can be attributed to the presence of higher levels of psychological empowerment.

5. DISCUSSION

In this chapter, the results obtained in the present investigation will be discussed, considering the hypotheses formulated in the literature review chapter.

Test of H1: Hypothesis 1 stated that the perceived adoption of a servant leadership style by management is positively correlated with the work engagement of military personnel. Considering the results obtained in the correlation section between variables (Table 1), it can be verified that a servant leadership style by management, as perceived by subordinates, is associated with higher work engagement experienced by them.

Based on the analysis, H1 is supported: the perceived adoption of a servant leadership style by management is positively correlated with the work engagement of military personnel ($r = 0.45$). A perception of servant leadership by management explains 20% of the variation in work engagement ($R^2 = 0.20$), where an increase in servant leadership also results in an increase in work engagement ($r > 0$), with the correlation considered moderate (Marôco, 2014). This result aligns with the literature, where according to Hunning et al. (2020) and Moreno et al. (2021), the adoption of a servant leadership style can be an effective strategy for increasing work engagement as well as reducing turnover intentions.

Test of H2: Hypothesis 2 stated that the perception of a servant leadership style adopted by the respondents' reference leader would be positively correlated with their psychological empowerment. Considering the results obtained in the variable correlation section (Table 1), it can be observed that servant leadership, as perceived by subordinates, is associated with a higher level of psychological empowerment experienced by them.

Based on the analysis conducted, Hypothesis 2 is supported: the perception of a servant leadership style adopted by the leader is positively correlated with the psychological empowerment of military personnel ($r = 0.53$). The perception of servant leadership explains 28% of the variance in psychological empowerment ($R^2 = 0.28$), where an increase in servant leadership also results in an increase in psychological empowerment ($r > 0$), with the correlation being considered moderate (Marôco, 2014). This result aligns with the existing literature, as according to Tripathi et al. (2021), servant leaders enhance the psychological empowerment of their followers by granting them autonomy and encouraging individual initiative, contributing to the strengthening of their psychological empowerment. Additionally, servant leadership positively impacts self-evaluation, which in turn leads to increased job satisfaction. This

connection suggests that military personnel led by servant leaders may experience greater personal appreciation and a stronger sense of fulfilment in their roles (Tischler et al., 2016).

Test of H3: Hypothesis 3 stated that the psychological empowerment experienced by military personnel is positively related to their work engagement. Considering the results obtained in the variable correlation section (Table 1), it can be observed that psychological empowerment is associated with an increase in work engagement.

Based on the analysis conducted, Hypothesis 3 is supported: the psychological empowerment of military personnel is positively correlated with their work engagement ($r = 0.69$). Psychological empowerment explains 48% of the variance in work engagement ($R^2 = 0.48$), where an increase in psychological empowerment is associated with an increase in work engagement ($r > 0$), with the correlation being considered strong (Marôco, 2014). This result aligns with the existing literature, as according to Qatrunnada and Parahyanti (2019), psychological empowerment encompasses key factors for intrinsic motivation, acting as a mediator between leadership styles and work engagement.

Test of H4: Hypothesis 4 stated that psychological empowerment was expected to mediate the relationship between perceived servant leadership and work engagement. Considering the results obtained in the linear regression section (Table 2), it can be observed that psychological empowerment positively influences the relationship between servant leadership and work engagement. An increase in work engagement is associated with an increase in perceived servant leadership, with psychological empowerment playing a mediating role in this positive relationship.

Based on the analysis conducted, Hypothesis 4 is supported: psychological empowerment is expected to mediate the relationship between the perception of servant leadership adoption by leaders and the work engagement of military personnel.

This result aligns with the existing literature, as psychological empowerment can act as a partial mediator in the link between servant leadership and work engagement. This suggests that the ability of servant leadership to foster greater engagement is influenced by the degree of psychological empowerment perceived by employees (De Klerk & Stander, 2014).

6. CONCLUSION

Considering the well-established relationship in the literature between servant leadership, psychological empowerment, and work engagement, this study aimed to analyze how a servant leadership style (adopted by leaders throughout the hierarchical chain) can positively impact the work engagement of those being led (subordinates) and how psychological empowerment may play a positive and mediating role in this relationship. The study followed a deductive reasoning approach, structured on a case study research design, adopting a quantitative research strategy implemented through the administration of questionnaires to a sample of 499 military personnel and civilians. The study was structured based on a case study research design.

Regarding Objective 1 (OE1) - analyzing the correlation between servant leadership and work engagement - it was found that servant leadership has a positive relationship with work engagement, with both being significantly correlated. This, in turn, is also a factor in retaining employees within the organization, thereby reducing intentions to leave (Hunning et al., 2020; Moreno et al., 2021).

Regarding Objective 2 (OE2) - analyzing the correlation between servant leadership and psychological empowerment - it was found that servant leadership has a positive and significant relationship with psychological empowerment. Servant leaders are capable of promoting and strengthening the psychological empowerment of their followers by granting them autonomy and encouraging individual initiative (Tripathi

et al., 2021). Servant leadership also reinforces trust within military units, a factor considered critical for successful command and mission execution. By prioritizing individual development over purely organizational objectives, servant leaders are able to build cohesive teams that are better equipped to achieve mission goals. This approach has proven effective in forming high-performance teams that excel in mission accomplishment (Vickery, 2016).

Regarding Objective 3 (OE3) - analyzing the correlation between psychological empowerment and work engagement - it was found that psychological empowerment has a positive and significant relationship with work engagement. Psychological empowerment significantly contributes to professional outcomes, demonstrating that when employees feel empowered, they exhibit higher work engagement and dedication (Macsinga et al., 2015).

Regarding Objective 4 (OE4) - determining whether the relationship between servant leadership and work engagement is mediated by psychological empowerment - it was found that psychological empowerment can act as a positive and significant mediator in this relationship. The ability of servant leadership to foster greater engagement is dependent on the degree of psychological empowerment perceived by followers (De Klerk & Stander, 2014).

The theoretical contribution of this study is based on the empirical evidence found regarding the role of psychological empowerment as a mediator in the relationship between servant leadership and work engagement in a military context. Furthermore, it seeks to contribute to the literature on the concept of servant leadership, which remains scarce within the Portuguese population and even more so in the military context.

As practical implications, it is essential to promote continuous investment in leadership training and skills development throughout a leader's career, with a particular focus on areas such as Communication, Teamwork, Decision-Making, and Management.

The limitations of this study include the cross-sectional nature of the data. To overcome this limitation, future research should incorporate longitudinal studies, allowing for the testing of effect directions and yielding more robust results that support the establishment of causal relationships between the formulated hypotheses. Additionally, all instruments used in this study relied on self-report measures, which may be subject to biases such as inaccurate memories or responses influenced by individual perceptions, with no possibility of external validation. Despite this, it is important to highlight that the conclusions obtained are consistent with the existing literature, reinforcing the credibility of the results.

For future research, it is recommended to include a greater number of demographic variables, such as the age and gender of the reference leader, as well as a larger and more diverse sample in terms of ranks or categories. Additionally, incorporating objective measures of work engagement, such as individual performance evaluations, and analyzing them alongside perceived psychological empowerment and the degree of servant leadership adoption would enhance the study's comprehensiveness.

Furthermore, the associations examined in this study represent an innovative contribution, as they had not been previously investigated within a Portuguese military population.

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IMPACT OF LEADERSHIP STYLES ON ORGANIZATIONAL COMMITMENT AND TALENT RETENTION IN THE PERMANENT STAFF OF THE PORTUGUESE ARMY

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ABSTRACT

This study examines the impact of different leadership styles on organizational commitment and the intention to leave among the permanent staff of the Portuguese Army. The findings indicate that transformational and authentic leadership styles significantly enhance organizational commitment and reduce the intention to leave, while the laissez-faire leadership style has the opposite effect. The study utilized a quantitative approach, collecting data from 228 respondents from officers and sergeants, and applied linear regression analysis to determine the impact of leadership styles on the variables of interest.

Keywords: Leadership, Authentic Leadership, Transformational Leadership, Organizational Commitment, Intention to Leave, Military Leadership.

1. INTRODUCTION

The recent pandemic has profoundly affected the labor market, introducing terms like "Great Resignation" and "Quiet Quitting" to describe employee disengagement and dissatisfaction. Leadership plays a crucial role in influencing how employees perceive and interact with their organizations. This study aims to explore how different

leadership styles impact organizational commitment and the intention to leave among the permanent staff of the Portuguese Army.

The Portuguese Army, like other military institutions, faces significant challenges concerning talent retention within its permanent staff. Turnover intention and organizational commitment are critical issues affecting the institution's stability and operational effectiveness, particularly given that many years of training are required to equip these highly specialized personnel.

Leadership is a complex process involving influencing followers to achieve common goals (Northouse, 2021). According to General Belchior Vieira (2002), leadership is the process of influencing human behavior, beyond what could be achieved solely through invested authority, to accomplish purposes, goals, and objectives defined and prescribed by the designated organizational leader. Research has demonstrated that different leadership styles can have varying impacts on job satisfaction, organizational commitment, and employees' turnover intention (Bass, 1985; Avolio & Gardner, 2005).

Through a questionnaire administered to 228 permanent army personnel, this study aims to examine how the various perceived leadership styles (Authentic, Transactional, Transformational, and Passive or Laissez-faire) influence organizational commitment and turnover intention. The goal is to assist in identifying future pathways and provide clearer insights to leaders regarding the impact of different leadership styles on talent retention within the Army's permanent staff.

2. LITERATURE REVIEW

2.1 TRANSFORMATIONAL, TRANSACTIONAL, AND PASSIVE OR LAISSEZ-FAIRE LEADERSHIP

Transformational leadership is characterized by the ability to inspire and motivate followers to achieve outcomes beyond their expectations, thus fostering a sense of mission and purpose (Bass, 1985). This leadership style encompasses four primary components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio & Bass, 2002). Within the military context, transformational leaders play a crucial role in building cohesion and esprit de corps. The component of inspirational motivation pertains to the leader's ability to communicate an appealing vision of the future, thereby encouraging followers to commit themselves to collective objectives (Bass & Riggio, 2006). For the Portuguese Army, this may translate into greater mission commitment and improved retention of talent among career personnel.

Transactional leadership is based upon exchanges or transactions between the leader and followers, wherein rewards are contingent upon performance and task completion (Burns, 1978). The two primary dimensions of transactional leadership include contingent reward and active management-by-exception.

The laissez-faire style is characterized by an absence of active leadership. Laissez-faire leaders typically avoid decision-making, abdicate responsibilities, and rarely take proactive measures (Bass, 1990). It can also be associated with passive management-by-exception, where the leader intervenes only after errors or failures occur (Bass, 1985). This leadership style generally correlates with negative outcomes, including decreased morale and follower dissatisfaction (Skogstad et al., 2007).

2.2 AUTHENTIC LEADERSHIP

The roots of authentic leadership lie in theories of positive psychology as well as transformational and ethical leadership. Positive psychology, a field developed by Seligman, emphasizes the positive aspects of human experience—such as resilience and well-being—suggesting that authentic leaders cultivate healthier and more motivating work environments (Seligman & Csikszentmihalyi, 2000). Authentic leadership involves self-awareness, relational transparency, and ethical decision-making (Walumbwa et al., 2008). Research indicates that authentic leadership fosters trust and strengthens organizational commitment.

2.3 ORGANIZATIONAL COMMITMENT

Defined as the psychological attachment and loyalty an employee feels towards their organization, encompassing affective, normative, and calculative dimensions (Meyer & Allen, 1991). É este compromisso que permite às organizações obter vantagens por forma a alcançar uma vantagem competitiva sustentável (Jena and Pradhan 2018).

Organizational commitment comprises three dimensions: (1) affective commitment, which reflects an individual's emotional attachment to, and identification with, the values and goals of the organization; (2) normative commitment, which is grounded in the principle of reciprocity—employees with high normative commitment feel a stronger sense of obligation and duty to remain with the organization; and (3) continuance commitment, which refers to an employee's desire or need to stay in the organization, based on a cost–benefit analysis of their personal investment versus the potential costs of leaving (Kaarsemaker, 2008; Nasab & Afshari, 2019).

2.4 TURNOVER INTENTION

Turnover intention refers to employees' willingness to leave the organization and is often influenced by the quality of leadership (Maertz & Griffeth, 2004). It is one of the strongest predictors of actual turnover, representing the most robust cognitive precursor to an employee's departure from the organization. As such, it serves as a reliable substitute for actual turnover rates in research contexts (Oliveira, 2009). According to Varshney (2014), turnover intention is a subjective perception held by an individual within an organization to leave their job in pursuit of alternative opportunities.

Authentic leadership—characterized by transparency, ethical conduct, and self-awareness—has a significant inverse correlation with employees' turnover intention. Authentic leaders are perceived as trustworthy and genuine, fostering a work environment where employees feel valued and supported. Such an environment mitigates uncertainty and stress, two factors frequently associated with the intention to leave (Walumbwa et al., 2008).

3. METHODOLOGY

3.1 HYPOTHESES

To develop the hypotheses for this study, a conceptual model was constructed (Annex I – Table 01), guided by the central research question: “What is the influence of leadership styles on the retention of career personnel in the Army?”

From this central question, two derivative research questions (RQs) were formulated:

- RQ1 – How are the leadership styles of career Army personnel characterized?
- RQ2 – What is the relationship between leadership styles and the retention of career Army personnel?

To address RQ1, Hypothesis 1 was developed. To address RQ2, Hypotheses 2 and 3 were formulated. The hypotheses are outlined below:

- Hypothesis 1 (H1): Leadership style negatively influences turnover intention.
- Hypothesis 2 (H2): Leadership style positively influences organizational commitment.
- Hypothesis 3 (H3): The relationship between leadership style and turnover intention is mediated by organizational commitment.

The hypotheses above are represented in the accompanying diagram.

Figure 1

Hypotheses diagram



Note. Source: Author's work.

3.2 METHODOLOGY AND PROCEDURES

The present study aims to examine the relationship among the following variables: authentic leadership, laissez-faire leadership, transactional and transformational leadership, along with organizational commitment and turnover intention. To analyze all variables, a quantitative, descriptive research design was adopted. The chosen procedure involved administering an online questionnaire, conducted at a single point in time, using the Google Forms platform.

The questionnaire was structured into four sections, and completion of all items was required for a response to be considered valid. The first section collected sociodemographic data, including personal information (gender and age group) and professional background (rank category, branch or service affiliation, current rank, and years of service by category). Sections two through four addressed the key study measures, asking participants to evaluate the leadership style of their immediate superior and their perception of the organization. Prior to completing the questionnaire, participants were informed about the study's objectives, confidentiality protocols, and anonymity guarantees.

A pre-test was conducted with 10 participants to validate response time, questionnaire clarity, potential errors, and data collection method. These participants were selected based on convenience. Following the pre-test, the questionnaire was submitted for approval to the Chief of Staff of the Portuguese Army, allowing it to be distributed via email to all Army officers and non-commissioned officers. As a result, a question regarding permanent cadre membership was added; participants who responded negatively were automatically redirected to the end of the questionnaire.

Participants were also encouraged to share the questionnaire with others, applying a snowball sampling strategy (Reis et al., 1997). The data collection period extended from April 17, 2023, to June 10, 2024.

3.3 KEY MESURES

This subsection presents the key measures used in the study. These were assessed using five-point Likert scales, ranging from 1 = "Never" to 5 = "Always," and seven-point Likert scales, ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree." Authorization to use each of the instruments was obtained from one of the original authors of each scale via email or through the Mind Garden website. The reliability

and internal consistency of the instruments were evaluated using Cronbach's alpha, with values above 0.7 considered acceptable (Rust & Cooil, 1994).

Authentic Leadership. The Authentic Leadership Questionnaire (ALQ), translated into Portuguese, was used in this study. The 16 items of the ALQ cover four dimensions identified by Walumbwa et al. (2008), distributed as follows: 5 items for Transparency (e.g., "My supervisor says exactly what they mean"); 4 items for Moral and Ethical Perspective (e.g., "My supervisor makes decisions based on their core values"); 3 items for Balanced Processing (e.g., "My supervisor carefully listens to different points of view before drawing conclusions"); and 4 items for Self-awareness (e.g., "My supervisor is aware of when they need to re-evaluate their positions on important issues"). The Cronbach's alpha for the overall authentic leadership scale was .97. The values for each dimension were: .90 for Transparency, .91 for Moral and Ethical Perspective, .89 for Balanced Processing, and .93 for Self-awareness.

Perceived Leadership Style. To assess other perceived leadership styles, the Multifactor Leadership Questionnaire – MLQ-5x4 (Avolio, Bass, & Jung, 1996) was used, based on the Portuguese military-context adaptation (Guiomar, 2010) validated for military use (Azevedo, 2021). This scale comprises 45 items divided into four dimensions: Transformational Leadership (20 items across five subscales with four items each), Transactional Leadership (8 items across two subscales with four items each), Passive Leadership (8 items across two subscales with four items each), and Leadership Outcomes (9 items across three subscales with three items each). The overall Cronbach's alpha for the MLQ-5x4 was .97. For each dimension: .97 for Transformational Leadership, .85 for Transactional Leadership, .75 for Passive Leadership (item 28 was removed), and .96 for Leadership Outcomes.

Organizational Commitment. Organizational commitment was measured using the Portuguese military-context adaptation by Fachada (2015) of the scale developed by

Allen and Meyer (1990), as translated by Nascimento et al. (2008). The instrument includes 18 items assessing three dimensions: Affective Commitment (e.g., “I find that my personal values and those of this organization are quite similar”), Normative Commitment (e.g., “I am willing to go above and beyond to help this organization succeed”), and Continuance Commitment (e.g., “For me, this is the best possible place to work”). The Cronbach’s alpha for the overall scale was .75. For each dimension: .78 for Affective Commitment (item 3 was removed), .78 for Normative Commitment, and .72 for Continuance Commitment.

Turnover Intention. Turnover intention was assessed using the unidimensional Turnover Cognition scale (Bozeman & Perrewé, 2001), validated for the Portuguese military context by Braga (2018). This scale includes five items (e.g., “I am likely to look for another job in the near future”). The Cronbach’s alpha for this scale was .90.

3.4 PARTICIPANTS

From the initial sample of 242 observations, 14 were excluded. Due to institutional limitations, the questionnaire could only be formally distributed to officers and non-commissioned officers (NCOs) of the Army's permanent cadre (QP). The second question of the survey asked whether the respondent belonged to the QP; 14 individuals answered negatively. In this context, QP personnel are defined as military members with permanent contracts and continuous career progression until retirement age. The final sample therefore consisted of 228 observations.

Regarding sociodemographic variables, the distribution of the sample reveals that 206 participants (90.4%) were male. In terms of age, approximately 92.1% were between 30 and 59 years old, with the median age falling within the 45–49 age range. The sample was evenly split between officers and NCOs, with 114 individuals (50%) in each category. As for branch or service affiliation, the largest proportion came from

the Infantry (66 participants, 28.9%), followed by Artillery (34 participants, 14.9%) and Cavalry (30 participants, 13.2%). Other branches each represented less than 10% of the sample, with Pharmacy, Veterinary Medicine, and Medicine each comprising only 2 participants (0.9%).

In terms of rank, 49 participants (21.5%) were Sergeant Majors (Sargentos Ajudantes). Regarding years of service, the most represented group was those with 25 to 29 years of service, also with 49 participants (21.5%).

Table 1

Demographic distribution of participants

Variable	Category	Frequency (%)
Gender	Male	90.4%
	Female	9.6%
Rank	Officers	50%
	Sergeants	50%

3.5 DATA ANALYSIS

The data collected were analyzed using IBM® SPSS® Statistics software. The statistical procedures included Reliability Analysis through the computation of Cronbach's alpha, sample characterization based on sociodemographic variables, as well as Descriptive Analysis, Correlation Analysis, Regression Analysis, and Analysis of Variance (ANOVA).

4. RESULTS

4.1 CORRELATION ANALYSIS

To assess the hypotheses regarding the influence of leadership styles on turnover intention and organizational commitment, the analysis began with a correlation analysis. The objective of this analysis was to identify the strength and direction of the relationships between the variables of interest—specifically, leadership styles (transformational, transactional, laissez-faire, and authentic), turnover intention, and organizational commitment (OC), including its subscales: continuance commitment, affective commitment, and normative commitment.

Table 2

Pearson correlations, means, and standard deviations of key variables.

	Average	Standard Deviation	Authentic Leadership	Transformational Leadership	Transactional Leadership	Laissez-faire Leadership	Leadership Results	Organizational Commitment	Turnover Intention	Age	Sex	Category	Weapons or Service	Rank	Years of Service
Authentic Leadership	3.09	0.91	1												
Transformational Leadership	3.16	0.87	,916**	1											
Transactional Leadership	3.07	0.72	,843**	,892**	1										
Laissez-faire Leadership	2.89	0.69	-,280**	-,278**	-,0107	1									
Leadership Results	3.17	0.99	,890**	,933**	,856**	-,271**	1								
Organizational Commitment	4.03	0.8	,470**	,433**	,418**	-,054	,455**	1							
Turnover Intention	2.75	1.19	-,451**	-,463**	-,368**	,271**	-,502**	-,473**	1						
Age	---	---	,184**	,204**	,176**	-,0099	,197**	0,114	-,208**	1					
Category	---	---	-,020	-,078	-,027	0,032	-,030	-,0105	0,010	0,130	-,059	1			
Weapons or Service	---	---	0,046	0,021	0,025	0,005	0,076	-,022	-,070	0,067	,210**	0,042	1		
Rank	---	---	0,088	,140*	0,080	-,076	0,095	,196*	-,096	,211**	-,020	-,869**	-,096	1	
Years of Service	---	---	,198**	,215**	,190**	-,0122	,215**	0,153	-,222**	,963**	-,150*	0,103	0,065	,237**	1

The correlation results indicate that transformational, transactional, and authentic leadership styles are significantly and negatively correlated with turnover intention. In other words, the greater the perception of these leadership styles, the lower the turnover intention among military personnel. Conversely, the laissez-faire leadership style showed a positive correlation with turnover intention, suggesting that the more prevalent this style is, the higher the intention to leave.

It is also observed that the Leadership Outcomes variable contributes to a 50% reduction in turnover intention, whereas the laissez-faire leadership variable contributes to an increase, in contrast to the other leadership styles, which have a positive impact in reducing turnover intention.

Regarding organizational commitment, transformational, transactional, and authentic leadership styles demonstrated significant positive correlations. On the other hand, laissez-faire leadership exhibited negative correlations with all subscales of organizational commitment, indicating a detrimental effect on military personnel's commitment to the organization.

Moreover, the Leadership Outcomes variable is associated with a 46% increase in organizational commitment, whereas the laissez-faire leadership variable contributes to a reduction, contrary to the other leadership styles, which positively influence commitment.

Table 3

Cronbach's alpha for leadership, turnover cognition and organizational commitment measures

Scale	Cronbach's Alpha
Authentic Leadership	0.97
Transformational Leadership	0.96
Transactional	0.85
Laissez-Faire Leadership	0.75
Organizational Commitment	0.85
Turnover Cognition	0.90

4.2 REGRESSION ANALYSIS

Subsequently, multiple regression analyses were conducted to test the direct impact of leadership styles on turnover intention and the subscales of organizational commitment, addressing Hypotheses H1 and H2.

Table 4

Regression models predicting organizational commitment and turnover

Independent Variable	Dependent Variable	β Coefficient	R ² Coefficient	p-value
Authentic Leadership	Organizational Commitment	0.55	0.22	<0.001
	Turnover Intention	-0.34	0.20	<0.001
Transformational Leadership	Organizational Commitment	0.43	0.19	<0.001
	Turnover Intention	-0.46	0.21	<0.001
Transactional Leadership	Organizational Commitment	0.42	0.18	<0.001
	Turnover Intention	-0.37	0.14	<0.001
Laissez-Faire Leadership	Organizational Commitment	-0.30	0.003	0.51
	Turnover Intention	0.30	0.07	<0.001

The findings show that all leadership styles significantly influence turnover intention, thereby confirming the hypotheses. Authentic leadership emerged as the most significant and impactful style. Transformational and transactional leadership styles also contributed to a reduction in turnover intention, whereas laissez-faire leadership was associated with an increase in such intention.

4.3 ANOVA (ANALYSIS OF VARIANCE)

In the Age Groups and Intention to Leave we find that $F(8, 495) = 9.02$, $p < 0.001$: This indicates that there are significant differences in the intention to leave among different age groups. In the Post-Hoc Tests: Tukey's HSD and Scheffé tests revealed that younger age groups (20-25 years) have a higher intention to leave compared to older age groups (>60 years). This suggests that younger employees are more likely to consider leaving the organization.

On the Seniority and Organizational Commitment, we have that $F(7, 496) = 6.88, p < 0.001$: Significant differences in organizational commitment were found across different levels of seniority. And the Post-Hoc Tests: Higher organizational commitment was observed among leadership positions compared to administrative roles. This implies that employees in leadership roles feel more committed to the organization.

About Activity within the Organization the value of $F(9, 494) = 4.19, p < 0.001$: Significant differences in organizational commitment were found across different activities within the organization. Post-Hoc Tests show that Employees in the telecommunications and/or informatics sector showed higher organizational commitment compared to those in the health and education sectors. This indicates that the nature of the work and the sector can influence the level of commitment employees feel towards the organization.

At Educational Level and Intention to Leave the $F(8, 495) = 9.02, p < 0.001$: Significant differences in the intention to leave were found across different educational levels. And Post-Hoc Tests: Employees with higher educational levels (e.g., post-Bologna Licenciatura, Master's, Doctorate) showed a higher intention to leave compared to those with lower educational levels (e.g., basic education). This suggests that more educated employees may seek better opportunities outside the organization.

5. DISCUSSION

The primary objective of this study was to examine the impact of different leadership styles on organizational commitment and the intention to leave among the permanent staff of the Portuguese Army. The findings provide significant insights into how transformational, authentic, and liberal leadership styles influence these variables.

The first major line of investigation in this study focused on examining the influence of leadership styles on turnover intention. Transformational leadership showed the greatest impact in reducing turnover intention. This finding aligns with the literature by Bass and Riggio (2006), which describes transformational leadership as a style capable of inspiring and motivating subordinates to achieve high goals and a stronger sense of belonging to the organization. Transformational leaders tend to foster a shared vision, promoting greater commitment and, consequently, lower intention to leave the organization.

Transactional leadership also demonstrated a significant impact, although smaller than that of transformational leadership. The emphasis on management-by-exception and contingent reward can be effective in talent retention by establishing a clear link between performance and reward, as explained by Burns (1978). However, it may not influence military personnel emotionally to the same extent as transformational leadership.

Authentic leadership also had a significant influence on reducing turnover intention, as described in Walumbwa et al. (2008). This leadership style—characterized by transparency, self-awareness, and strong moral values—appears to build trust-based relationships, which may explain the decrease in turnover intention observed in this study. This suggests that leaders perceived as authentic foster a work environment in which military personnel feel more valued and connected to the organization, thereby reducing their intention to leave, as also supported by Cunha et al. (2007).

In contrast, laissez-faire or passive leadership showed the opposite effect, significantly increasing turnover intention. This result reflects the negative characteristics associated with this leadership style, in which a lack of involvement, guidance, and support from leaders can lead to frustration, demotivation, and ultimately, the intention to leave the organization. This observation confirms previous studies that associate

laissez-faire leadership with adverse organizational behaviors, as described by Skogstad et al. (2007).

The second line of investigation explored the influence of leadership styles on organizational commitment—specifically, continuance, affective, and normative commitment. According to the regression results, transformational and authentic leadership styles positively influenced all subscales of organizational commitment. Transactional leadership showed a significant positive effect on affective and normative dimensions but not on continuance commitment. Laissez-faire leadership, on the other hand, did not demonstrate a significant relationship with any dimension of organizational commitment

Transformational leadership, which stands out for its inspirational motivation, idealized influence, and intellectual stimulation, proved particularly effective in strengthening all three forms of organizational commitment. Its positive effect on affective commitment suggests that transformational leaders, through their ability to inspire and emotionally connect with military personnel, foster a strong identification with the organization, increasing the desire to remain for emotional reasons, as described by Walumbwa et al. (2008). Likewise, the positive impact on normative and continuance commitment suggests that transformational leaders also influence perceptions of moral obligation and calculated benefits, reinforcing the organizational bond.

Authentic leadership, characterized by consistency between words and actions and a focus on ethics and transparency, as described by Luthans and Avolio, also had a positive effect on all dimensions of organizational commitment. This result suggests that military personnel perceive authentic leaders as trustworthy and morally sound, which increases their loyalty (affective commitment), their sense of moral duty

(normative commitment), and their evaluation of the benefits of remaining with the organization (continuance commitment).

Although less impactful overall, transactional leadership had a significant positive effect on affective and normative commitment. The emphasis on performance recognition and reward-based management appears to reinforce perceptions of fairness and responsibility among military personnel, which may explain its influence on these two dimensions, as suggested by Bass & Riggio (2006).

Interestingly, laissez-faire leadership showed no significant influence on any dimension of organizational commitment. This reflects the passive nature of this leadership style, which likely fails to generate the engagement necessary to foster commitment among military personnel.

The third line of investigation aimed to explore the mediating role of organizational commitment in the relationship between leadership styles and turnover intention. Mediation analyses confirmed that organizational commitment significantly mediates the relationship between transformational, transactional, laissez-faire, and authentic leadership and turnover intention.

In the case of transformational and authentic leadership, the mediation effect of organizational commitment reinforces the idea that these leadership styles reduce turnover intention, which in turn enhances commitment. This suggests that leaders who inspire, demonstrate self-awareness, and act transparently are not only able to retain military personnel but also strengthen their organizational commitment, as supported by Bass and Riggio (2006).

In the case of transactional leadership, the mediation indicates that while this style may not directly influence turnover intention as strongly as transformational and authentic leadership, the reduction in turnover intention through management-by-exception and contingent reward indirectly contributes to strengthening commitment.

As expected, laissez-faire leadership demonstrated an inverse mediation effect, reducing organizational commitment and thereby increasing turnover intention. The lack of direction and support from laissez-faire leaders not only leads military personnel to consider leaving the organization but also weakens their bond with it.

6. CONCLUSION

The study highlights the critical role of leadership in influencing organizational commitment and the intention to leave among the permanent staff of the Portuguese Army. By adopting transformational and authentic leadership styles, military leaders can enhance organizational commitment and reduce turnover, ultimately contributing to a more stable and effective military organization.

The present article aimed to analyze the influence of leadership styles on turnover intention and organizational commitment among personnel in the Portuguese Army, as well as to explore the mediating role of turnover intention in the relationship between leadership and organizational commitment. Based on the analyses conducted, it was found that leadership styles—particularly transformational and authentic leadership—play a crucial role in talent retention and in strengthening organizational commitment. These findings are consistent with existing literature and with the studies of Tucker and Turner (2011), Walumbwa et al. (2008), and Seligman & Csikszentmihalyi (2000).

The results indicate that transformational leadership had the strongest impact in reducing turnover intention and enhancing organizational commitment, confirming the hypothesis that transformational leaders—who inspire, motivate, and emotionally engage their subordinates—create a positive work environment that fosters a stronger desire to remain in the organization (Bass & Avolio, 1993). These results are in line with previous studies showing that transformational leadership is associated with

higher levels of organizational commitment and lower turnover rates across various organizational contexts (Avolio, Bass, & Jung, 1999).

Similarly, authentic leadership proved effective in reducing turnover intention and increasing organizational commitment. Leaders who demonstrate transparency and uphold ethical values are perceived as trustworthy and consistent. This leadership style has been associated with greater subordinate well-being and the creation of a healthier work environment, as reported by Gardner, Coglisier, Davis, and Dickens (2011). The trust fostered by authentic leadership strengthens organizational commitment, as military personnel feel more connected to the organization.

In contrast, laissez-faire or passive leadership showed a negative effect on both organizational commitment and turnover intention. This finding supports previous studies by Skogstad et al. (2007), which highlight that the absence of direction and involvement from laissez-faire leaders may lead to demotivation and a higher intention to leave. The lack of active support from such leaders contributes to frustration among subordinates, increasing the likelihood that they will consider leaving the organization. Transactional leadership also demonstrated a significant, though more moderate, effect on both turnover intention and organizational commitment. The use of contingent rewards and the performance-based focus characteristic of this leadership style appears to have a positive effect in some contexts. However, it may fall short of emotionally engaging military personnel, as observed by Judge and Piccolo (2004). While transactional leadership can effectively set clear goals and promote compliance with expectations, it may not inspire the same level of affective commitment as transformational or authentic leadership.

Mediation analysis confirmed that turnover intention plays a key role in the relationship between leadership and organizational commitment. Transformational and authentic leaders, by reducing turnover intention, reinforce military personnel's

connection to the organization. These findings support the framework proposed by Meyer and Allen (1991), who argue that organizational commitment is shaped by emotional, normative, and continuance components—and that effective leadership can strengthen these dimensions while reducing the desire to leave.

Leadership Development: The findings underscore the importance of developing transformational and authentic leadership qualities among military leaders. Training programs should focus on enhancing leaders' ability to inspire, motivate, and act ethically.

Retention Strategies: To reduce turnover, the Portuguese Army should prioritize creating a supportive and engaging work environment. This includes recognizing and rewarding employees' contributions, providing opportunities for professional growth, and fostering a culture of trust and transparency.

Addressing Liberal Leadership: Efforts should be made to minimize the prevalence of liberal leadership within the organization. This can be achieved through leadership training, performance evaluations, and feedback mechanisms that encourage proactive and engaged leadership.

Leadership Theory: This study contributes to the existing body of knowledge by empirically validating the positive effects of transformational and authentic leadership on organizational commitment and the intention to leave within a military context. It also highlights the detrimental effects of liberal leadership, providing a comprehensive understanding of how different leadership styles impact employee outcomes.

Organizational Commitment: The study reinforces the importance of organizational commitment as a mediator between leadership styles and turnover intentions. It demonstrates that committed employees are less likely to leave the organization, emphasizing the need for leaders to foster a strong sense of loyalty and attachment.

Leadership Training: Implement training programs that focus on developing transformational and authentic leadership skills. These programs should include modules on ethical decision-making, effective communication, and motivational techniques.

Employee Engagement: Develop initiatives aimed at increasing employee engagement and satisfaction. This could include regular feedback sessions, career development opportunities, and recognition programs.

Performance Management: Establish a robust performance management system that identifies and addresses liberal leadership behaviors. Provide leaders with the tools and support needed to adopt more proactive and engaging leadership styles.

Sample Size and Generalizability: The study's sample size was limited to 228 respondents from the Portuguese Army, which may affect the generalizability of the findings. Future research should consider larger and more diverse samples to validate the results.

Cross-Sectional Design: The cross-sectional design of the study limits the ability to draw causal inferences. Longitudinal studies are recommended to examine the long-term effects of leadership styles on organizational commitment and turnover intentions.

Additional Variables: Future research could explore additional variables that may influence the relationship between leadership styles and employee outcomes, such as organizational culture, job satisfaction, and employee well-being.

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THE IMPACT OF LEADERSHIP ON STRESS MANAGEMENT: THE CASE OF GIOP/UI MILITARY PERSONNEL

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ABSTRACT

Workplace stress is increasingly common. However, little has been researched in Portugal regarding the stressful situations security forces face. The literature indicates that one of the professions most exposed to stress is the police due to their highly uncertain and challenging situations. As GIOP is a force that operates in situations aimed at restoring and maintaining public order, it is evident that the operational environment is characterised by high levels of stress among its military personnel. According to various authors, one key challenge for leaders is adapting effectively to such contingencies.

With this in mind, the present research aimed to study the impact of the leadership currently applied by GIOP platoon commanders on the stress management of their subordinates. Five interviews were conducted, and 34 questionnaires were distributed to sergeants and guards, providing insights into the leadership-stress relationship within the force.

The findings suggest that, although stress levels are high, a leadership style combining democratic and charismatic leadership, emphasising proximity, continuous support, and military physical training can effectively mitigate operational stress.

Keywords: Stress, GNR, GIOP, Military Leadership, Charismatic Leadership, Democratic Leadership

1. INTRODUCTION

Stress can be defined as the reaction an individual has to their environment as a result of pressure, which varies from person to person (Lazarus & Folkman, 1984). In this regard, among various professions, there are certain roles, such as those held by GNR military personnel, particularly those in the GIOP that, due to their fundamental role in maintaining order and security, are more frequently exposed to critical incidents. These incidents involve situations that provoke strong emotional reactions in the worker, affecting both their immediate and future behavior (Carleton et al., 2019).

Furthermore, the stress experienced by police officers stems from factors such as randomness, uncertainty, violence, and the dynamic nature of situations. Therefore, it is a profession particularly exposed to stressful situations, unlike most other occupations (Collins and Gibbs, 2003).

Being the GNR a security force of a military nature, with a broad range of missions entrusted to it, it is well known that it is a force that is “subject to analysis and scrutiny by the population”, which means that the military personnel who are part of it must “face a reality full of pitfalls” (Alves, 2011 as cited in Maia, 2017, p. 1). Within the GNR, the GIOP is structured as a UI subunit that operates in highly critical situations, which cause elevated levels of stress among its personnel. This is due to its specific missions, among others, including maintaining and restoring public order, ensuring the security of major events, and supporting the management and resolution of critical

incidents, as established in Article 44 of the OLGNR. For these reasons, it is essential, in today's context, that commanders are highly motivated and able to enhance their leadership through the management of relationships and emotions (Maia, 2017).

Based on these premises, it has therefore become essential for this research to determine how the leadership exercised by platoon commanders impacts the stress management of the military personnel currently serving in the GIOP.

For that purpose, the objectives of this research were to understand how leadership influences the stress management of military personnel currently serving in the GIOP (GO), to characterize the operational environment in which the GIOP carries out its activities (SO1), to determine which situations are stress-inducing, according to GIOP personnel

(SO2), to characterize leadership within the GIOP (SO3), to distinguish the characteristics of leadership in a military context, according to GIOP personnel (SO4), to identify the coping strategies adopted by GIOP personnel (SO5) and to identify the procedures adopted by GIOP platoon commanders when facing signs of stress in their subordinates (SO6).

In line with the research objectives, and following the guiding model of Rosado (2015), the main research question of this study was "In what way do the characteristics of leadership in an operational environment impact the effectiveness of stress management among military personnel, specifically within the GIOP?" and derived questions, in order to answer the MRQ, were "How is the operational environment characterized, according to GIOP personnel?" (DQ1), "What are the stress-inducing situations, according to GIOP personnel?" (DQ2), "How is leadership characterized within the GIOP?" (DQ3), "What are the characteristics that distinguish leadership from military leadership, according to GIOP personnel?" (DQ4), "What coping

strategies are adopted by GIOP personnel?” (DQ5) and “What procedures are adopted by commanders in response to signs of stress in GNR/GIOP personnel?” (DQ5).

2. LITERATURE REVIEW

2.1 STRESS CONCEPT

Lazarus (1993) points out that the genesis of the concept of stress dates to the 14th century, although at that time it had a meaning of difficulty or adversity. Other authors, such as Marques (1994 as cited in Calado, 1998), argue that etymologically the word stress originated from the Latin *stringere* in the 15th century, meaning to narrow or bind, thereby associating the concept with a physical threat.

In any case, the concept only gained its technical importance in the 17th century, through a study presented by Robert Hooke, who focused on how bridges were designed to withstand the action of winds and other natural forces, that would later influence the conception of stress in the 20th century, referring to the concept as “an external demand or load on a biological, social, or psychological system” (Lazarus, 1993, p. 2).

Thus, the definition underwent other new formulations in the 20th century. At the beginning of the century, the concept became linked to psychosomatic medicine, evolving into a mental illness (Wilder, 1985 as cited in Calado, 1998); during WWII, stress was referred to as a cause of emotional collapse; and with its later term, due to subsequent sociological transformations, it came to be understood that everyday situations such as marriage, growth, or anxiety over school exams could produce effects similar to those of combat (Lazarus, 1993).

By the 21st century, the word stress had evolved into a term used in a wide variety of everyday contexts. At first glance, Cieslak et al. (2020) argue that stress is a psychosocial phenomenon experienced by human beings in different situations.

According to Harms et al. (2016), stress refers to the physiological and/or psychological arousal that occurs when an individual perceives that, in the face of a given threat, their resources are depleted or overwhelmed. Similarly, in the view of Lazarus and Folkman (1984), stress refers to the reaction that a given individual has toward their surrounding environment as a result of pressure experienced.

However, it is important to note that literature establishes four distinctions, which are essential to understanding the concept of stress: the definition of stress itself, stressors, strain, and outcomes. Regarding stress per se, the authors state that it is “the misalignment between the individual and their environment, which produces physical, psychological, and behavioral responses” (Cunha et al., 2016, p. 167). On the other hand, stressors refer to the stimuli that induce stress in individuals (their causes), strain is the psychological, physical, or behavioral response of the individual to those stressors. Outcomes, finally, are the consequences of strain, both at the individual and organizational levels (Cunha et al., 2016).

Although the concept is most often associated with a negative connotation, it is worth emphasizing that it can, paradoxically, lead to positive attitudes and behaviors, as presented by Seyle (1956, as cited in Everly et al., 1981), one of the leading researchers in the field of stress. In this regard, stress does not always have negative effects on individuals and that, quite often, motivation, growth, and personal development depend on a certain level of stress. This is the distinction between distress and eustress—negative and positive stress, respectively.

2.1.1 OCCUPATIONAL STRESS AND ITS CAUSES (STRESSORS)

The EASHW (2025, p. 10) defined stress as “a pattern of emotional, cognitive, behavioral, and psychological reactions to adverse and harmful aspects related to the content, organization, and environment of work”. In this regard, Cieslak et al. (2020)

further contribute by stating that threatening situations subjectively perceived by individuals often occur in the workplace. Oliveira and Queirós (2012, p. 286) also argue that, since work activity is one of the most important aspects of human life and while work can be a source of personal satisfaction, that is not always the case because “the work context is often associated with various frustrations, stress, and other psychological disorders”.

Harms et al. (2016) follow the same perspective, even arguing that stress resulting from work activities can be divided into two forms: occupational stress and interpersonal stress. According to the authors, occupational stress arises from the nature of the task itself or from working conditions, while interpersonal stress, on the other hand, results from being in conflict with others or from the feeling of having to meet others’ demands or expectations.

There are various theoretical approaches and models that explain the causes behind elevated levels of occupational stress such as the “life and work events theory”, which advocate that personal life events, such as the death of a family member, the birth of a child, or financial problems, can act as stimuli that lead individuals to exert additional effort, resulting in strain that may ultimately harm their health, causing depression, anxiety or post-traumatic stress disorder; the “person-environment fit theory”, which compares the characteristics of the environment with those of the individual, stating that misalignment between the two is a key factor in the occurrence of stress; and the “demand-control theory”, developed by Karasek and Theorell (1990, as cited in Chambel, 2005), that aims to explain the relationships between the psychosocial aspects of work and physical and mental health, job satisfaction, and productivity. According to this explanatory model, there are two factors that impact the experience of stress: the psychological demands of the job (such as work overload or conflicting demands from supervisors) and the level of control, including the decision-making

latitude that the individual has over their work (Cunha et al., 2016, pp. 167–168; Almeida, 2016).

Having presented the framework of the main models that explain the origin of stress, it is also important to highlight that literature uses a conceptualization that distinguishes organizational causes from extra organizational ones, based on their origin. Considering the integrative view of stress presented by Cunha et al. (2016), the authors further reveal that the causes of stress can indeed originate both from the personal life of individuals and from the organization itself and can be felt both individually and at the organizational level.

2.1.2 COPING

The literature reveals that one of the key points in stress management is the development of strategies to reduce its levels (Esteves and Gomes, 2013). Following the model of Lazarus and Folkman (1984), to which Alves (2012, p. 16) adheres, coping "is based on the problem or emotions" and coping strategies revolve around the dichotomy of "approach/avoidance."

Therefore, they propose two types of strategies – one focused on problem-solving coping (instrumental coping), which, according to Almeida (2012), involves attempting to change the situation (approach), starting with defining the problem and seeking alternative solutions; and the other focused on emotional regulation (avoidance), through which the individual tries to reduce or eliminate distress by employing emotional control that allows them to think and act in the best possible way. Latack (1986 apud Almeida et al., 2016) also dedicated his study to the concept of coping, presenting a somewhat different perspective. While agrees with Lazarus and Folkman (1984) in that there are two possible approaches, he adds a third set of strategies – symptom management, according to which the symptoms arising from

occupational stress can be managed.

It is well established in the literature that the strategy to be adopted can focus either on emotional control (avoidance) or on problem-solving, changing the situation (approach). Among the categories of strategies that can be adopted by individuals, the choice of strategy will, however, depend on the stressful situation in which the individual finds themselves. The coping style that an individual chooses varies according to the situations experienced throughout their life, as well as the specific situation that triggers stress (Alves, 2012).

2.2 STRESS IN THE OPERATIONAL ACTIVITY OF LAW ENFORCEMENT FORCES

The international academic community has been conducting several studies that demonstrate that police forces are exposed to higher levels of stress compared to other professions (Brown and Campbell, 1994; Collins and Gibbs, 2003; Costa et al., 2007). However, at the national level, few studies have been conducted focusing on the stress affecting law enforcement forces. Nevertheless, efforts in this direction seem to be increasing: as Costa (2017, p. 11) mentions that "ASFIC expressed its concern with the issue, with news reporting that a research project on burnout would be launched among them, with the aim of preventing it". Similarly, IGAI held an International Conference on "Mental Health in Law Enforcement: Stress, Burnout, and Suicide", which shows that the overseeing authorities – not just the academic community – are already aware of the circumstances under which law enforcement forces perform their duties.

In a study conducted by Santos and Queirós (2008), which involved members of PSP, GNR, and PJ, it was shown that all participants had experienced traumatic events. Among them, the GNR soldiers are highlighted as those who deserve the most concern

from researchers.

Furthermore, Rebelo and Leal (2012 apud Costa, 2017) identify the causes of stress in GNR soldiers as "the imposition of new statutes, which led to a change from camaraderie among colleagues to individualism; the military work environment, as well as the arrogance of superiors; excessive working hours; the inability to start a family in favor of a professional career and/or the inability to maintain a healthy family environment due to career advancement conditions".

Moreover, the literature emphasizes that, although all professions are associated with levels of stress, in the case of police work, these levels can be aggravated depending on the type of incident that GNR soldiers or PSP officers respond to and the responsibilities inherent in operational activities are also factors that increase those stress levels because the degree of uncertainty associated is directly linked to stress (Moderno, 2012).

In the same vein, it is mentioned that the profession is exhausting, with the added possibility of being held responsible both disciplinary and criminally, and that officers "are required to be prepared in their profession to respond promptly to a variety of scenarios" (Correia, 2018).

More than understanding the causes and stress-inducing factors among portuguese police officers, it is important to understand what the literature reveals regarding the coping strategies they adopt. This will help ensure that, in the future, the most suitable strategies are reinforced, both by the officers themselves and by their leadership. As researchers, we believe that leadership also plays a fundamental role in teaching appropriate strategies and monitoring the well-being of their subordinates, as we will further discuss in the chapter dedicated to leadership.

The literature is not consensual, reporting both that police officers use inadequate strategies and that they also adopt appropriate strategies. Costa (2017) points to the

consumption of legal and illegal substances, excessive sleep, denial, and self-blame, which can ultimately lead to suicide. On the other hand, Alves (2012), in a study conducted with GNR soldiers, concluded that the most commonly used strategies are active coping, planning, seeking instrumental support, seeking emotional social support, taking a break from current activities, positive reinterpretation and growth, acceptance, and retention. This supports Lazarus and Folkman's (1984) view on coping strategies, through which they present two possibilities – problem-focused coping and emotion-focused coping.

2.3 LEADERSHIP AND STRESS, STRESS AND LEADERSHIP, EMOTIONAL INTELLIGENCE AND THE ROLE OF THE LEADER-MANAGER

Having reached this point, it can be state that these are two concepts that are “indissolubly linked” (Harms et al., 2017, p. 1), and that authors, despite agreeing on the fact that one concept serves the other, assume various positions in the literature, which, however, contribute to affirming the importance that leadership plays in critical contexts: authors such as Bryman (1993) or House, Spangler, and Woycke (1991) argue that leadership can only reveal itself in moments of crisis, with these moments substantiating themselves as instances that potentiate the revelation of the leader's character; on the other hand, these moments of extreme stress can be configured - as Bennis and Thomas (2022) reveal - as situations in which it is possible to develop leadership skills; there are also authors who identify stressful events as those in which leadership is most needed, since the presence of a leader allows, in these cases, for more efficient decision-making and, consequently, better preparation of the group (Vugt, Hogan & Kaiser, 2008).

The sustained discussion surrounding stress in the workplace and how leadership can impact it, such as those by Mackey, Frieder, Brees, and Martinko (in press), by Tepper

(2000), or by Zhang and Liao (2015), has not taken into account the relationship between leadership styles and their association with follower behaviors in terms of stress.

In order to understand whether the leader is prepared to deal with stressful situations, as well as to determine whether the leaders themselves are a source of stress or, at best, a source of stress relief, Harms et al. (2017) conducted a study in which, through a meta-analytic review based on the formulation of two problems (the reasons why a leader can be the target of feelings of stress and the leadership styles that cause higher or lower levels of stress in subordinates) and concluded that the stress levels of leaders will be higher the weaker their leadership, and that the adoption of “positive leadership behaviors, such as presenting a vision and communicating a positive perspective, would serve as a positive buffer against the stress and burnout of subordinates” (Harms et al., 2017, p. 7). Furthermore, it was possible to ascertain that close ties between leaders and followers imbue the followers with a greater sense of certainty and, likewise, the ability to combat it, and also that destructive leadership behaviors force subordinates to be vigilant and, therefore, lead to higher feelings of stress and burnout. The study further infers that transformational leadership is associated with low levels of stress, while abusive supervision is associated with high levels of stress and burnout in subordinates (Harms et al., 2016, pp. 7-8).

It consists of leadership that “involves a strong personal identification with the leader, the sharing of a future vision. Transformational leaders delegate, convey courage, support the development of their collaborators, and inspire them” (Heitor, 2006, p. 137). Corroborating this meaning, Nielsen and Munir (2009) demonstrate that transformational leaders are those who adopt a visionary and creative leadership style, which causes their subordinates to be inspired and, thus, make independent decisions. Notwithstanding the existence of studies that directly relate the use of this leadership

style to stress and burnout, these authors also carried out a study that focuses on the psychological mechanisms that explain this link, concluding that the use of transformational leadership by middle managers or supervisors proves positive with regard to the well-being of those led.

Concomitantly, it will therefore be important, following what Rosado (2015, pp. 200-201) reveals to us, that “managers at different levels of the organization must be fully aware of the leadership challenges they face, judiciously adapting their leadership style,” further arguing that, in light of motivation theories, the needs, expectations, behaviors, and reinforcement/reward of subordinates constitute the four indispensable factors for the (lack of) motivation of employees, and that this is, moreover, absolutely crucial in the choice of leadership style to follow. To all these characteristics should be associated, emotional intelligence, which “assumes great relevance, precisely because it allows us to recognize and regulate emotions, not only in ourselves but also in others”, because it is associated with benefits that can be applied in contexts of team motivation and leadership.

3. MATERIALS AND METHODS

Regarding the chosen scientific method, the deductive method was adopted, which explains the particular based on various theoretical options, and the strategy used was the mixed-methods approach, since instrumental vehicles involved conducting questionnaire surveys and interviews, in order to capitalize on the potential and overcome the vulnerabilities of the qualitative and quantitative strategies. In respect of the type of study, the case study was used as the social reality under study was embodied in a single unit - the GIOP.

In order to confer greater rigor to the investigation, semi-structured interviews were used, directed at the Platoon Commanders of the GIOP, who are Junior Officers with

command functions, tasked with the arduous duty of applying leadership skills both in the context of the regular operational activity of the aforementioned sub-unit of the UI, and in less regular, but no less relevant, operational situations, as they are imbued with high levels of stress and require the maintenance of public order and security.

Questionnaire surveys were also applied, which all Sergeants and Guards currently performing duties in the GIOP were expected to answer, in order to establish the link between the leadership applied to them by their hierarchical superiors and the impact it has on stress management, as stipulated in the initial research question.

In addition to these instruments, non-participant direct observation, scientific databases for data collection such as “EBSCO”, “B-ON”, “Google Scholar”, “SciELO”, “Publish or Perish”, “Zotero”, and books borrowed from the AM Library were used."

4. RESULTS AND DISCUSSION

The research lasted for three months, during which the investigators had the opportunity to interview officers with command roles in the GIOP about how they respond to signs of stress exhibited by the military personnel they command and lead. The corresponding interview script can be found in Appendix A.

As key ideas from the semi-structured interviews conducted with the five platoon commanders currently serving in the GIOP as of December 2023, and in response to the first question presented to them the interviewed platoon commanders concur with what is mentioned in literature, as they revealed that GIOP is exposed to “significantly high levels of stress” and conduct “operations in sensitive zones with considerable levels of danger”. The OE is a “three-dimensional environment, sensitive urban areas with many buildings, groups of individuals, and areas associated with drug and weapon trafficking” and the operations are conducted in “events with large gatherings of people”.

When asked if they believe that the military personnel experience stress, the main responses were “stress arises from specific situations where the intensity of emotions is greater” and “when, manifestly, some legal right is jeopardized”. Platoon commanders also stated that stress is “momentary stress, derived from the use of force, due to fear of internal and external sanctions” like “image and video capture and consequent media exposure” and can be “a result of the military condition, especially within the scope of 3rd ODL given the scenarios in which they work”.

It was also possible to perceive that the military personnel who experience the most stressful situations are “the military personnel who have the special public order intervention course in tactical entries during house searches” or “the military personnel of the platoons who perform operational duty”. The following question, related to the preventive measures implemented by the platoon commanders to mitigate the effects of stress, made it possible to perceive that “the constant practice of physical exercise (with challenges between teams within the platoon and collective games)”, “dynamic instructions”, and “some moments of relaxation through socializing among peers” are adopted strategies, as well as “a close relationship with the military personnel and being attentive to possible problems they may have in their personal lives”, which reveals that the platoon commanders operate in line with what the literature suggests. When asked about how they approach military personnel in stressful situations, the platoon commanders suggested “from a perspective of understanding and greater closeness”, “always being willing to help” and “monitoring the military personnel's behavior after these situations”. The stance was especially revealing when “in the operational environment, I do everything within my reach to keep the military personnel focused on the task they have to perform” and “in more extreme situations where the military personnel are losing emotional control in the situation, I try to remove them from the location”; “Regarding problems in their personal lives, I provide

all the support that is possible to the military personnel in question and I follow up on the various situations that arise”; “I foster team spirit in the Platoon.

Lastly, when asked about the leadership style that they employ in stress-inducing situations, it was evident the “charismatic, situational and democratic leadership”.

Since the central objective of this investigation was to understand the impact that the leadership exercised by the GIOP platoon commanders has on the stress management of their subordinates, additional questionnaire surveys were conducted, answered by 34 Sergeants and Guards of the GIOP. The questionnaire form is presented in Appendix B.

The sample is characterized by 2.9% being female (n=1) and 97.1% being male (n=33), 58.8% of the respondents were in the 18 to 30 years age group (n=20), 38.2% of the sample belonged to the 31 to 40 years age group (n=13), and 2.9% of the sample fell within the 41 to 55 years age group (n=1).

Regarding the characterization of the operational environment in which they perform their duties, it was possible to determine, on a scale from 0 to 5 — where 0 means "Not stressful at all" and 5 means "Extremely stressful" — that 2.9% rated it as 0 on the scale (n=1), 26.5% rated it as 1 (n=9), 14.7% rated it as 2 (n=5), 44.1% rated it as 3 (n=15), 11.8% rated it as 4 (n=4), and no participants rated it as 5 (n=0). Considering the stress experienced by the military personnel due to the operational environment, it was determined that 64.7% of the respondents reported that they do experience stress (n=22), while 35.3% stated that they do not (n=12).

Concerning the operational life situations considered to be sources of stress, the group of surveyed military personnel provided various responses, highlighting Tactical-Police Incidents with 41% (n=14). Additionally, 35.2% (n=12) reported that there are no stress-generating situations, 8.7% (n=3) identified unpredictability as a source of stress, and finally, 14.5% (n=5) pointed to interactions with the media as stress-

inducing.

About the strategies adopted by the military personnel when facing a stressful situation, emphasis was placed on engaging in dialogue with comrades, applying what they have been taught, and practicing sports.

Regarding how they acquired the strategies, it was observed that 52.9% of the respondents developed the strategies through their own experience (n=18), 35.3% through training courses (n=12), 8.8% through guidance from their commander (n=3), and only 2.9% stated that they acquired them through all of these means (n=1), and all respondents unanimously stated that they believe the strategy used by their platoon commander to mitigate the effects of stress in stress-inducing situations is adequate (n=34), as they promote activities such as military training, social gatherings and sports.

Finally, the surveyed military personnel stated that 85.3% see their commander as a role model (n=29) and 14.7% responded that they do not (n=5). They all affirmed that there are activities promoted by their commanders that help relieve stress. 76.5% of the military personnel stated that they have confidence in their commander (n=26), 17.6% turn to external resources outside of the GNR (n=6), and 5.9% use both methods (n=2).

5. CONCLUSION

In response to DQ1, it was possible through the conducted interviews and questionnaires, to understand that the GIOP operates primarily in sensitive urban areas, characterized by their three-dimensionality, complexity, and nighttime operations. GIOP personnel ensure public order during major events, religious festivities, and carry out operational duties related to the management and resolution of critical

incidents, which reveals that the OE is marked by uncertainty and triggers high levels of adrenaline and consequently, stress among the military personnel.

Regarding DQ2, this investigation revealed that, due to their current high exposure to public scrutiny, the recording of images related to their actions causes stress among the military, due to concerns about internal repercussions at the disciplinary level. The interviews also indicate that, given the context in which the GIOP operates, the tasks carried out by the personnel are highly demanding and require elevated levels of alertness and focus, which constitutes one of the main factors contributing to increased stress levels.

About DQ3, we concluded that the leadership applied is based on the principles of charismatic, democratic, motivational, and primarily proximity-based leadership.

As for DQ4, it was possible to determine that leadership in a military context is characterized by the example set by platoon commanders, who adopt practices such as physical training aimed at developing military values, particularly esprit de corps and sacrifice. Additionally, dynamic police training sessions are highlighted, in which contributions from all subordinates are welcomed.

For DQ5, strategies such as staying calm, listening to fellow comrades, and conducting a post-action review at a later stage were highlighted. This review involves reflecting on less appropriate practices and recalling the steps and procedures to be followed, as taught during training sessions. The values cultivated through constant practice and exercises carried out during training contribute to the development of camaraderie and trust among peers, feelings that serve as key factors in dealing with the effects of stress at critical moments.

And finally, for DQ6, the approach is marked by proximity and understanding. In cases of momentary stress, commanders consider it appropriate to reassign the military member to a different function that involves less exposure. When the stress stems from

difficulties in reconciling personal life with the operational context, the strategy adopted is a proximity-based leadership, aimed at conveying feelings of trust, calm, and reassurance to subordinates.

In summary, through these findings, it was possible to answer the MRQ, which was based on the inquiry “In what way do the characteristics of leadership in an operational environment impact the effectiveness of stress management among military personnel, specifically within the GIOP/GIOE?”. Firstly, stress is shown to be inseparable from the operational activity of the GIOP, with ISEOP teams standing out for carrying out tasks such as tactical entries during home searches, as well as all other personnel engaged in operational deployments.

However, given that the leadership exercised by platoon commanders is characterized by leading by example, proximity to subordinates, trust, and understanding - and is also described by both military personnel and commanders as democratic, charismatic, and motivational leadership - it can be concluded that this type of leadership has a positive impact on stress management. This is because such leadership promotes a sense of well-being in the work environment, allowing military personnel to mitigate the negative effects of operational duties.

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THE EMOTIONAL TOOLBOX FOR LEADERSHIP: BUILDING CADETS' SELF-AWARENESS AND COMMUNICATION SKILLS

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ABSTRACT

Mental well-being is often overlooked despite rising emotional distress worldwide. The COVID-19 pandemic exacerbated burnout, depleting emotional resilience. Research shows a decline in emotional intelligence (EQ) across working generations over the past four years, with Generation Z and Millennials most affected. Emotional hygiene is essential, requiring early integration into personal and professional development. Military cadets must develop emotional intelligence skills to enhance leadership, self-awareness, and resilience. This study, part of a sabbatical leave project, aimed to equip cadets with practical, emotional intelligence tools to strengthen interpersonal and leadership skills. Students from diverse military backgrounds participated in an intensive emotional intelligence and leadership training program. There were 57 feedback replies assessing the program's impact on self-awareness and communication skills and 43 answers to the two-phase questionnaire used during the project. Results showed increased emotional intelligence skills awareness among students. Participants recommended making such training mandatory in military curricula. Integrating emotional intelligence into leadership education can enhance cadets' ability to navigate complex environments, fostering resilient and empathetic leaders.

Keywords: Emotional Intelligence, Leadership Development, Military Training, Cross-Cultural Awareness.

1. INTRODUCTION

Although the title Emotional Toolbox for Leadership may initially look abstract, its meaning is deeply embedded in our daily interactions at several levels, namely within military, academic, or leadership-oriented environments. The subtitle Building Cadet Resilience and Cultural Awareness defines the study's target group and two characteristics that can be seen as challenging for today's I-oriented generations.

This paper reflects on how Emotional Intelligence (EI) and its skills can bridge the gap between the individual and the Other and how the metaphor of an emotional toolbox can be used as both a communication tool and a healing mechanism for emotional and social wounds. That is to say, for non-resolved situations, for example. According to Goleman (1998), a successful leader is composed of three main percentages: 25% Intelligence Quotient, another 25% technical knowledge, and the other 50% belonging to the Emotional Quotient (EQ). This significant percentage centred on the Emotional intelligence skills use is primarily born from neurotransmitters in the brain's limbic system, which controls emotions, impulses and drives.

As for the emotional toolbox, Tony Attwood, a renowned clinical psychologist specializing in autism spectrum disorders, describes it as a different type of tool that will help people of all ages with emotional and social understanding (Attwood, 2004). The concept of an emotional toolbox is often employed in therapeutic, educational, and personal development contexts to help individuals cope with emotional challenges and enhance their emotional well-being. It also draws inspiration from the emotional first-aid kit thought by psychologist Guy Winch, who advocates for emotional healing to be taken as seriously as physical healing. Winch advocates that communication injuries—such as unresolved conflicts, misinterpretations, or emotional suppression—often leave wounds that are less visible but equally impactful; for that reason, we need to heal those wounds.

Taking Winch's theory into account and based on Goleman's theories on the five components of emotional intelligence, we believe that the core components of the Toolbox of Emotions must be Empathy, Social Skills, Self-Awareness, Self-Regulation, and Motivation. These elements can be trained, maintained, and used as "remedies" in interpersonal situations. A leader equipped with this Emotional Toolbox is capable of guiding others and recognizing and responding to emotional cues within him/herself and their team.

We begin by contextualizing global emotional well-being, narrowing our focus to the downsides and decrease of emotional intelligence levels and focusing on the most affected generations, Millennials and Generation Z. Next; we present the pilot project training initiative designed to enhance communication and emotional intelligence skills among military academy students: Emotional Intelligence Skills Training for Better Communication, our proposed emotional toolbox. We then reflect on the metaphorical and functional aspects of the emotional toolbox to improve leadership skills and conclude with implications for personal growth.

2. LITERATURE REVIEW

2.1 EMOTIONAL TOOLBOX CONCEPT

In educational settings, the emotional toolbox concept is adapted to assist children in recognizing and managing their emotions. Later in the educational path, Loughran (Loughran, J., 2020) argues that emotional intelligence is crucial for leaders to navigate the challenges of their roles, particularly in environments where academic values may conflict with corporate demands. The Military Academies are good examples of this kind of environment.

In this paper, the term emotional toolbox refers to a collection of strategies, techniques, or resources cadets can utilize to manage and regulate their emotions and actions

effectively. To be able to be and feel more emotionally efficient, therefore more empathetic and building better and stronger connections with the Other, and the team, in terms of work environment. In summary, the emotional toolbox is a metaphorical and practical framework that empowers individuals to proactively manage their emotional health by equipping them with personalized emotional intelligence skills tools and strategies.

Six Seconds, a global non-profit organization dedicated to advancing and disseminating Emotional Intelligence (EI), has conducted a “State of the Heart” study across more than 169 countries and 227,610 participants over the past 13 years. Their findings point to a global emotional recession, with key indicators of EI declining steadily—an effect exacerbated by the COVID-19 pandemic, the use of AI and decreased face-to-face interaction. The data underscore a stark reality: humanity is struggling with diminished emotional literacy at a time when it is most needed. For the past four years, global emotional intelligence has decreased by 5.54% (Six Seconds, 2024).

When reporting, these findings are backed by Sutin et al. (2022) that personality traits such as extroversion, openness, agreeableness, and conscientiousness—integral to EI—have declined at a pace that usually spans a decade, now compressed into just two years. According to Joshua Freedman (2023), we are experiencing a global decline in emotional intelligence, paving the way for disseminating issues such as disconnection, isolation, and burnout. These declines directly influence communication, collaboration, and leadership success, highlighting an urgent need to re-centre emotional intelligence in educational and organizational systems.

Research by the Yale Center for Emotional Intelligence echoes this concern. Their studies indicate a steep rise in feelings of anxiety, helplessness, and emotional fatigue among the global population, particularly during and after the pandemic. Marc

Brackett, founding director of the centre, notes that when we fail to recognize and regulate our emotions, they control our behaviours in ways that do not serve us or others (Brackett, 2019). These patterns reflect a critical erosion in the emotional infrastructure necessary for both personal well-being and social cohesion.

Also, The OECD (Organisation for Economic Co-operation and Development), a forum and knowledge hub for data, analysis and best practices in public policy, working with over 100 countries, has similar results on its Survey on Social and Emotional Skills (SSES) 2023. This survey collected data from youngsters between 10 and 15 years of age and, among other findings, showed that students reported lower levels of most social and emotional skills in 2023 than in 2019, and students with lower emotional regulation skills (particularly optimism), energy and trust tend to report poorer well-being outcomes, including lower life satisfaction and psychological well-being.

People are tired, burned out, and too often, not thriving. According to a Gallup annual study of employees in over 160 countries and areas, seven in 10 people globally report struggling or suffering. People are lonely and isolated (Gallup, 2025). It is necessary to reverse the recession trend on emotional and social skills. Especially as it is mainly happening among younger generations: the students from any high school, who then transfer to universities, to military academies, and become the people in charge, the future leaders.

2.2 EMOTIONAL RECESSION AMONG YOUTH

Generations Z (born 1995–2012) and Millennials (born 1981–1996) appear to be the most affected by this downturn in emotional competencies. As they enter or advance within the workforce, their reduced levels of EI—combined with heightened susceptibility to stress and burnout—pose significant risks, not only for individual

mental health but also for organizational resilience and the future of leadership. According to the American Psychological Association's 2023 Stress in America report, Gen Z adults are the most likely of any generation to report poor mental health, high-stress levels, and a lack of emotional support (American Psychological Association, 2023).

Jean Twenge, author of *iGen* and *Generations*, attributes much of this shift to the rise of digital communication and social media, when youngsters do not interact face-to-face but merely on screens, eroding the development of empathy and emotional nuance (Twenge, 2017). These concerns are also reflected in recent workplace studies by Deloitte and Gallup (2025), which show that young professionals crave emotionally intelligent leadership, yet often find it lacking.

Training and support tailored specifically for these demographics is crucial. Incorporating emotional literacy into formal curricula, integrating it into extracurricular initiatives, or embedding it in mentorship programs can foster the growth of key EI competencies—such as self-awareness, emotion regulation, and empathetic leadership. As Susan David, psychologist and author of *Emotional Agility*, asserts, “Discomfort is the price of admission to a meaningful life.” (David, 2016) Teaching younger generations how to navigate that discomfort with emotional skills can set the foundation for healthier individuals and more emotionally intelligent organizations. People change behaviours when motivated to do so...but how does one share knowledge and experience with somebody who sees the world differently? How does one inspire performance without formal authority? Emotional Intelligence skills training is one of the ways. The various components of emotional intelligence help achieve successful interpersonal relationships, supporting some abilities, such as listening, cooperating, asking for help, joining teams or negotiating conflicts (Denham, 2007). Emotionally intelligent youngsters will become better human beings and can

become better leaders. In the words of Mayer (Mayer et al., 2004), effective emotional leadership requires self-awareness, self-regulation, social awareness, and relationship management to lead others effectively, and these skills and the ability to use them effectively need training.

3. MATERIALS AND METHODS

As part of a sabbatical leave project, from October 2022 to June 2023, a pilot initiative titled Emotional Intelligence Skills Training for Better Communication was developed at the Portuguese Military Academy and implemented across five European Basic Officer Education Institutions (BOEI): the Portuguese Military Academy (Portugal), the General Military Academy (Spain), the University of Turin (Italy), the National Defense Academy of Latvia, and the Rakovski National Defence College (Bulgaria). The project aimed to identify and strengthen underutilized communication and emotional skills among cadets, transforming them into practical leadership tools.

A total of 103 students participated: 22 cadets were part of the group of control and were asked to complete the two-phase questionnaire; 81 students were also asked to complete the two-phase questionnaire and participated in all sessions, with training conducted in groups of up to 20 students per institution.

The following students took part in the entire project: 22 Portuguese students (5 women and 17 men); 17 Spanish students (5 women and 12 men); 11 Italian students (1 woman and 10 men); 20 Latvian students (2 women and 18 men); and one male American student (included in the group of students from National Defense Academy of Latvia); 10 Bulgarian students (3 women, six men, 1 preferred not to say); totaling 81 students who took part in the four modules (table 1).

Table 1

Sample distribution

Institution	Country	Participants	Session Format
Portuguese Military Academy	Portugal	22	In-person
General Military Academy	Spain	17	Hybrid
University of Turin	Italy	11	Online
National Defense Academy of Latvia	Latvia	21	In-Person
Rakovski National Defence College	Bulgaria	10	Online
Total		81	Varied (mostly in-person)

Each group engaged in a four-session program over a month or within the time frame of a week (depending on the institution), with 90-minute sessions. This structure allowed students time to reflect on the concepts learned, and the intention was that they should apply the concepts progressively. The curriculum consisted of four core modules:

Non-verbal communication – “The Walk That Talks”: Focused on increasing awareness of body language, its perception and interpretation and how it can affect all kinds of relationships and daily connections and activities; Emotional Literacy – “Are Words Gone with the Wind?”: Aimed at expanding emotional vocabulary and encouraging expressive self-awareness; Emotional Intelligence and Communication – “Human Skills for Human People”: Explained the way emotions work in our brain and emphasized the value of being empathetic and also the relevance of self-empathy; focused on the power of active listening, and provided students with practical strategies for emotionally intelligent interactions; Decision-Making – “Who Do You Think You Are?”: Encouraged critical reflection on personal actions and emotional responses and created awareness on the decision-making process individuals have to face daily and provided space for reflection upon the responsibility of action taking and decision making.

The program's expected outcomes included greater self-awareness, enhanced decision-making confidence, and a deeper understanding of interpersonal dynamics and communication patterns at national and international levels. The project contemplated using the State of the Mind Questionnaire at the beginning of the training and reutilizing it at the end of the four sessions to analyze and assess measurable results after completion of the training.

This was the reason behind the choice of the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF) by Petrides. It is a 30-item measure questionnaire that evaluates the global trait of Emotional Intelligence. It can also be used to assess the four traits of Emotional Intelligence factors: Well-Being, Self-Control, Emotionality, and Sociability. Throughout the training, the four main topics of the sessions were presented to the students and each of them directly linked to these four traits, and each of the traits was explained and exemplified in the light of Petrides's theory.

The questionnaire's name was changed to the State of the Mind Questionnaire to appeal more to the students. They were told that the questionnaire would make them reflect upon how they know and manage their emotions and would be a quantitative means of understanding whether the training affected them or not. It is worth mentioning that the original name of the questionnaire was constantly introduced and highlighted, its roots explained, and the logo and sources appeared in all visual aids used.

The sessions were facilitated as follows: In each of the five groups, the first session always started with an introduction by the lecturer, the purpose of the project and the training, and a table of contents. Then, there was an explanation of the purpose of having to reply to a questionnaire, which would be the same in the first and last sessions. Students were given the Link to the online questionnaire and the time to fill it out.

The first session's topic was nonverbal language communication, and its title was "The Walk that Talks." Each session presented a topic, and each title raised a brief brainstorming and some remembrance of previous sessions when students were asked to identify which session had dealt with what topic.

After filling out the questionnaire, the main topic of communication was linked to the trait Sociability of TEIQue- SF and the reasons why were elicited from the students and then explained in more depth and linked with the concepts of self-awareness and self-regulation. Students were asked about the differences between verbal and nonverbal communication and reflected upon the principles to consider when using verbal language in several different contexts. This task made them aware of how they used verbal language when communicating with others. It also helped them identify ways to improve their daily communication and personal and professional relationships by identifying possible barriers and means to overcome them. Next, students were asked to identify different ways to communicate nonverbally. Although one may think that this task would be easily and rapidly concluded, it always took much longer than verbal communication tasks. Students were surprised to hear about technical terms like proxemics, rapport, haptics, kinesics, paralanguage, chronemics, and meanings. However, after explaining the concepts, they immediately came up with objective examples of each and always tried to find alternative examples and associations with their daily lives.

At the end of each session, students were given some food to reflect upon until the next session and to help them put concepts into practice. Also, students were suggested to use an immediate way to measure which aspects of each session had impacted each group. This was done through a challenge: Share a word or concept that you took from today's session. This challenge was repeated at the start of the following session,

working as a type of revision from the previous week: share something you remember from the last session.

The second session focused on the group and individual knowledge of emotional intelligence, emotions and their meaning and role. Its title was Emotional Literacy: Are Words Gone with the Wind? The trait of well-being was the Link to TEIQue-SF, and there would always be an ice-breaker discussion on the associated concepts of self-esteem, happiness, and optimism and its connection to motivation: self and external. In this session, students got familiar with the concept of Emotional Intelligence, its five components according to Goleman and how it works brain-wise. Then, they were led to describe emotions, where and how we can identify them, and their functions. A more interactive and ludicrous part of the session would occur when students were invited to show emotions physically and, after that, to come up with a list of the emotions they remembered. Food for thought exercise was for each student to look at a thorough list of emotions provided and try to describe an emotion they felt during the week mentally that had never occurred to them before. The following session answers the question: How did you feel this week? Alternatively, How are you feeling today always led to discussion, explanation and laughter.

The third session on Emotional Intelligence and Communication highlighted the trait emotionality, defined by Petrides, therefore focusing on emotion perception, noticing our own and other people's emotions; Emotion expression in terms of our way of doing it; Empathy: by experimenting to have different looks on the same subjects; and Relationships: working to create awareness on the true purpose of relationships and knowing how to sustain them. Students were given exercises to practice empathy and, at the same time, assertiveness and were given situations of possible miscommunication to be able to find emotionally intelligent solutions for them.

The last session focused on decision-making and the EI trait associated with self-control. By becoming aware of concepts like impulse management, emotion regulation and stress management and their meanings, students were in contact with subjects they seldom reflected upon, like the strength and intensity of emotions that you have to deal with when making decisions, how well one can manage one's emotions in high stake situations where even minor mistakes can lead to tragic endings; and the ability to deal with the aftermath of emotions.

4. RESULTS AND DISCUSSION

The initial plan was to conduct one live session and three online sessions. However, as shown on Table 1, the project was conducted in various forms in all five countries for different reasons. It might have been more beneficial for the project to have had all institutions participating live. It proved difficult to have students completing the State of the Mind Questionnaire at the end, once they realized they should have memorized or recorded some place the required code names from the first session. That constitutes the main reason for the low numerical result in this questionnaire: only approximately half of the participants (43) responded.

With the Portuguese students, the four sessions were performed face-to-face, as it could be done in the Military Academy's classrooms. In the other cases, we had mixed situations.

With the student cadets from the Military Academy of Zaragoza, Spain, there was the chance to go to the Academy and meet them in person. Two sessions were done live and two online, as being with the students in person for four consecutive weeks was impossible.

In Bulgaria, meeting the group in person and giving them a session out of four in their presence was also possible. This group was constituted by military personnel but not cadets. It was a heterogeneous group whose ages ranged from 25 to 54.

As for Latvia, the best alternative for classes was to try an intensive approach, which allowed the cadets to be with the same group live for two mornings in two days. The four sessions were facilitated for the cadets involved throughout the two mornings.

In Italy, due to administrative delays that prevented the sessions from being held in person, the four training sessions were carried out online, one per week.

During the 90-minute sessions, students got acquainted with the proposed contents. Then, the sessions went on as interactive and lively as possible by getting students to elaborate on the topics and have a joint reflection on them.

At the end of the training, the activities and sessions were expected to impact the trainees' development of self-awareness, empowerment in decision-making, awareness of the ways students communicate and relate with others, and awareness of the effect of the way students act and react to others. However, out of the 103 participants, only 43 completed pre- and post-project assessments, limiting the sample for final data analysis. The fact that students needed to use a code name when completing the questionnaire and keep that same code name in the final test might have made it more challenging to complete the tasks than initially planned. However, a separate feedback questionnaire received 57 responses, offering valuable qualitative insights.

Although the project could not materialize as initially planned, the four sessions per group happened, and the objective outcomes were positive and encouraging in terms of continuing future projects. These objective results were mirrored in the feedback questionnaire that students were asked to fill out at the end of the training and after completing the State of the Mind Questionnaire.

In the feedback questionnaire, participants emphasized the most positive aspects after the training: increased emotional awareness, improved communication skills, the relevance of the training to military careers, and interactive learning. As for the identified areas for improvement, students highlighted the session duration (some stated that 90 minutes was too much, others stated that they should have had more sessions), the preference for face-to-face formats, and the desire for more practical exercises (besides debates and discussions on the topics).

5. CONCLUSION

In times of global uncertainty and emotional disconnection, leadership must go beyond strategic decision-making to embrace healing and reconnecting as a central component. Through Emotional Intelligence and the metaphorical Emotional Toolbox, we can learn to lead and do so with empathy, care, and awareness. Empathy is one of the most potent EQ leadership competencies, particularly when accompanied by the ability to perceive and express emotions. According to Anabel Jensen (Freedman, 2019, p. 196), empathy is an indispensable part of emotional healing. Emotional expression not only fosters authenticity but also enhances physical and mental health. The five steps to empathy are recognizing body language, listening, noticing the pain, responding verbally, and responding with action. Social skills are a practical extension of empathy, manifested through Active listening, Constructive feedback, openness to criticism and praise and Maintaining respectful dialogue even under stress. When we mention self-awareness and self-regulation, we are talking about the need for a self-development process involving the expression of emotions and the knowledge and regulation of emotions, which means being aware of and able to modify emotions when necessary.

The Emotional Intelligence Skills Training for Better Communication project demonstrated the critical role of self-awareness and emotional communication skills in cadets' personal and professional development across multiple European military institutions. Through targeted sessions that explored non-verbal communication, emotional literacy, empathy, decision-making, and emotional regulation, students were invited to reflect on their emotional processes and the impact of their interactions with others. By linking training content directly to key emotional intelligence traits—such as sociability, well-being, emotionality, and self-control—the program encouraged cadets to understand their emotional experiences better and develop practical communication strategies. Although challenges such as participation rates and different learning formats impacted the scope of quantitative data, qualitative feedback highlighted significant improvements in emotional awareness, communication skills, and decision-making confidence.

This paper has presented a reflection on how Emotional Intelligence (EI) and its associated skills can serve as a bridge between the individual and the Other, emphasizing the metaphorical and practical use of the "emotional toolbox" as both a communication tool and a healing mechanism for emotional and social wounds. The training initiative implemented at the military Academy underscores the necessity of equipping future leaders with competencies that enable effective interpersonal communication, emotional resilience, and cultural awareness. Ultimately, nurturing these emotional competencies in future military leaders fosters more effective communication and more empathetic, resilient, and socially responsible leadership, essential for navigating the complex interpersonal and emotional demands of contemporary military and global contexts.

In light of the emotional decline identified in recent global studies, particularly among younger generations who will constitute the future leadership cohort, initiatives such

as Emotional Intelligence Skills Training for Better Communication are not only timely but essential. Strengthening emotional intelligence must be prioritized within educational and organizational settings to reverse the trend of emotional deterioration and to build healthier, more empathetic, and ultimately more effective leaders for the future.

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MILITARY LEADERSHIP AND CLIMATE CHANGE: DOING MORE, WITH LESS AND BETTER

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ABSTRACT

As we know, the world stands at a critical juncture – on the brink of irreversible damage due to global warming. This tipping point demands urgent, decisive action, leaving no space for indifference, hesitation, or delay. In this context, considering climate change as a threat multiplier, institutions with centuries – if not millennia – of history, such as the military, cannot afford to overlook this pressing global challenge. Given its vast social influence, operational reach, and sheer scale as a major collective force, the military has a unique responsibility to act. The question we seek to address is both timely and provocative: should military priorities remain exclusively focused on mission effectiveness, or must environmental efficiency – aligned with global climate preservation and mitigation goals – become an integral pillar of military doctrine and leadership decision-making. This transformation would transcend existing frameworks advocated by organizations like the United Nations and the European Union. Furthermore, we will explore which leadership models are best suited to navigate this dual imperative, balancing operational excellence with environmental governance.

Keywords: Climate change, effectiveness, efficiency, military leadership, mitigation.

1. INTRODUCTION

The world stands at a defining moment in history. According to the Intergovernmental Panel on Climate Change (Intergovernmental Panel on Climate Change [IPCC], 2021; 2023) and leading scientific research (Rockström et al., 2009), humanity is approaching critical and potentially irreversible planetary tipping points. Climate change no longer represents a distant or abstract threat – it constitutes a real and present danger to global security, ecological stability, and human well-being. Sea-level rise, extreme weather events, desertification, and resource scarcity are not merely environmental issues. They are geopolitical catalysts that exacerbate social unrest, undermine development, and strain global peace and security infrastructures (Department of Defense [DoD], 2021; NATO, 2021; UNEP, 2022).

In this context, the armed forces – arguably one of the most structured and logistically powerful institutions in the modern world – occupy a unique and paradoxical position. Militaries are simultaneously contributors to and victims of climate change. On the one hand, the global military sector accounts for approximately 5.5% of total carbon emissions (UNEP, 2022), making it a major emitter of greenhouse gases and a consumer of vast natural resources. On the other hand, climate-related disruptions increasingly compromise military operations, readiness, and global humanitarian missions.

This duality presents a compelling imperative: armed forces must now navigate the challenge of maintaining strategic and operational effectiveness while simultaneously reducing their environmental footprint. As mentioned, climate change is widely recognised as a threat multiplier (NATO, 2021), military institutions can no longer remain away from global sustainability efforts. Their strategic, logistic, and normative capacities place them in a privileged position to lead by example in both climate adaptation and mitigation.

In this context, the question guiding this paper is urgent and forward-looking: should military strategy remain focused almost exclusively on mission effectiveness, or must environmental efficiency become a central pillar of military doctrine and leadership? So, we aim to explore how environmental considerations can be systematically integrated into military strategy, doctrine, and decision-making. It also seeks to identify and analyse leadership frameworks – particularly transformational and adaptive leadership models (Bass & Riggio, 2006; Verfuëth et al., 2023) – that are capable of balancing mission readiness with sustainability, innovation, and long-term planetary stewardship.

Moving beyond compliance with international environmental norms, such as those of the United Nations Framework Convention on Climate Change (UNFCCC) or the European Green Deal, this approach calls for a fundamental paradigm shift. Military leadership must internalise ecological intelligence not as an external mandate but as a core component of resilience, foresight, and ethical command. As Dalby (2020) and Timmermans et al. (2024) argue, ‘green militaries’ are not a contradiction in terms: they are essential actors in the Anthropocene.

In addressing this imperative – to do more, with less, and better – militaries have the potential to shape a new defence and security narrative: one in which the protection of the planet becomes inseparable from the protection of people.

2. LITERATURE REVIEW

2.1 OVERVIEW AND CRITIQUE OF EXISTING LITERATURE

Recent literature explores the intersection of military leadership and climate change, emphasizing the dual role of armed forces: contributing 5-6% of global CO₂ emissions (Heede, 2019) and being impacted by climate-driven disruptions that compromise operational readiness (DoD, 2021). Strategic efficiency—the integration of operational

preparedness and ecological governance—emerges as a solution, supported by transformational (Bass & Riggio, 2006) and adaptive leadership models (Heifetz et al., 2009), which drive innovations such as hybrid-electric vehicles and circular logistics (RAND, 2023; IPCC, 2022).

Critiques highlight biases in existing scholarship: an overemphasis on institutional reforms and technological fixes, neglecting cultural dynamics within military hierarchies and non-Western contexts (Bennett & Peters, 2020). Standardized metrics for assessing military ecological footprints remain underdeveloped, and qualitative case studies (e.g., NATO's solar-powered bases) limit generalizability (UNEP, 2022). Theoretical foundations need to include: i. ecological footprint methodology (Wiedmann & Minx, 2008) to quantify emissions and resource consumption; ii. transformational leadership theory, aligning sustainability with institutional identity; iii. systems-oriented approaches (Rockström et al., 2023), linking logistics to planetary ecological thresholds.

Methodologies may combine: i. case studies (e.g., Finland's 2030 carbon neutrality targets); ii. Policy analyses (e.g., NATO's Climate Change Action Plan); iii. cost-benefit models (Global Commission on Adaptation, 2021).

Gaps and recommendations: i. cultural resistance (limited exploration of hierarchical barriers in non-Western militaries, for instance, from Asia and Africa; ii. metrics (absence of global standards for tracking 3 emissions in defense supply chains: iii. Echnology (underexplored potential of AI/blockchain for environmental transparency: iv. ethics (neglect of intergenerational equity as a driver of ecological stewardship).

2.2 PROPOSED EFFECTIVE METHODS AND ORIGINALITY

This study proposes employing comparative cross-national analyses to identify regulatory best practices, participatory action research to integrate junior personnel

into sustainability initiatives, and lifecycle assessments to evaluate emerging technologies such as hydrogen-powered drones.

This review identifies a critical lack of interdisciplinary frameworks integrating leadership theory, climate science, and geopolitical analysis. It proposes leveraging cultural narratives (e.g., honor/duty) to foster ecological accountability and advocates for AI-driven systems and transnational governance. By synthesizing adaptive leadership with planetary boundaries, it positions militaries as pioneers in Anthropocene security (Dalby, 2020), transcending conventional policy critiques.

2.3 CLIMATE CHANGE AS A THREAT MULTIPLIER AND MILITARY RESPONSIBILITY

The ecological footprint, a metric quantifying human demand on natural ecosystems (Rees & Wackernagel, 2018), extends beyond greenhouse gas emissions to include unsustainable resource extraction, waste generation, and irreversible ecological damage. Military supply chains exemplify this multidimensional impact, with their reliance on fossil fuel-intensive vehicles, single-use materials in equipment, and insufficient waste management protocols (Bennett & Peters, 2020; DoD, 2021). For instance, “the armored vehicles, aircraft, and naval vessels accounting for over 75% of operational energy consumption” (DoD, 2021). Single-use materials, such as non-recyclable packaging and disposable equipment, further exacerbate waste streams, while inadequate disposal protocols – particularly in forward-deployed environments – often lead to environmental contamination (DoD, 2019; Falvo et al., 2015; Morales et al., 2024; Qayyum et al., 2021). Such practices create a 'triple burden' of carbon emissions, resource depletion, and ecological degradation and starkly contradict international climate mitigation frameworks, including the Paris Agreement’s goal of

limiting warming to 1.5°C (IPCC, 2023), underscoring the urgency for systemic reforms in defence sector sustainability.

Climate change functions as a geopolitical threat multiplier, amplifying security risks by intensifying resource competition, mass migration, and interstate tensions (EU, 2020; NATO, 2021). Projections indicate that rising temperatures could reduce global crop yields by up to 30% by 2050, exacerbating water scarcity and displacing over 140 million people in climate-vulnerable regions by mid-century (World Bank, 2022). Concurrently, extreme weather events – such as intensified cyclones and prolonged droughts – destabilize fragile states, creating fertile ground for conflict (IPCC, 2023). Paradoxically, military infrastructure is both a contributor to and a casualty of these dynamics. Coastal naval bases face escalating risks from sea-level rise and storm surges, while inland installations grapple with operational disruptions caused by heatwaves and water shortages (DoD, 2021; UNEP, 2022). Recognizing this dual vulnerability, NATO (2021) and the United Nations (UN Resolution A/RES/75/212, 2021) have mandated the integration of climate resilience into defence strategies, including infrastructure hardening and disaster-response preparedness.

Nevertheless, the military sector remains a disproportionate environmental stressor. Defence activities account for 5-6% of global CO₂ emissions – surpassing the aviation industry – due to energy-intensive armaments production, fossil fuel-dependent deployments, and large-scale exercises (Heede, 2019; UNEP, 2022). Single fighter jet missions, for instance, emit over 25 tons of CO₂ hourly (Fly a Jet Fighter, 2023; Smith, 2012), while permanent bases in ecologically sensitive regions drive habitat fragmentation and toxic waste accumulation (Singer & Cole, 2020). These impacts are magnified in jurisdictions with lax environmental oversight, highlighting the need for binding transnational regulations (Mach et al., 2020).

To move ‘more mission-ready with fewer emissions’, armed forces must adopt the concept of the ecological footprint – a holistic measure encompassing direct greenhouse gas releases, material consumption, waste generation and ecosystem impacts (Wiedmann & Minx, 2008). Recent analyses reveal that military supply chains – ranging from diesel powered transport to single use plastic packaging – remain a largely under regulated environmental hotspot (Timmermans et al. (2024).

Urgent reforms are therefore required:

- a) energy transition in military platforms, leveraging biofuels, hydrogen, and electrification where feasible (DoD, 2022);
- b) green procurement standards, prioritising low impact materials and circular economy principles in equipment and rationing (EU Green Deal, 2020);
- c) ecosystem based adaptation, integrating conservation and restoration of natural buffers – mangroves, wetlands and forests – into base and perimeter planning (IPCC, 2022);
- d) robust environmental governance, including transparent carbon accounting, third party verification and stringent host nation environmental protocols for overseas deployments (UNEP, 2022).

However, we also find some important barriers to reducing the military food footprint:

- a) cultural resistance, as hierarchical structures often oppose changes to entrenched practices (Heifetz et al., 2009);
- b) budgetary constraints, driven by short-term financial cycles hinder long-term investments in sustainable infrastructure (Bar-El et al., 2009; NATO, 2021).
- c) measurement gaps and challenges arise from the absence of globally recognized standardized metrics, impeding accurate tracking and assessment of progress (UNEP, 2022);
- d) system integration challenges emerge as legacy technological infrastructures

encounter significant barriers to assimilating emerging digital solutions, creating persistent interoperability obstacles within modern technological ecosystems (Linhard, 1996).

Despite these difficulties, by embedding environmental efficiency as a core pillar of doctrine and command – alongside mission effectiveness – the military not only reduces its own vulnerability but also demonstrates national leadership in global sustainability. In doing so, armed forces can help stabilise climate vulnerable regions, support humanitarian responses to climate disasters, and contribute to the wider endeavour of mitigating and adapting to climate change as outlined in the Paris Agreement and UN Sustainable Development Goals.

2.4 MISSION EFFECTIVENESS VERSUS EFFICIENCY: A STRATEGIC DILEMA

The perceived tension between mission effectiveness and environmental efficiency constitutes a false dichotomy rooted in 20th-century industrial military paradigms, where operational success was narrowly defined through immediate tactical outcomes rather than systemic resilience (Dalby, 2020; Frerks et al., 2024). Contemporary security landscapes, however, demand a reconceptualization of effectiveness to incorporate sustainability as a force multiplier. This shift aligns with emerging frameworks of strategic efficiency – a synthesis of mission readiness and ecological stewardship that enhances long-term operational viability while mitigating climate risks (Bousquet et al., 2020; European Union Defence Agency [UEDF], 2022).

2.4.1 THE FALLACY OF THE TRADE-OFF NARRATIVE

Historically, military planning prioritized short-term mission success, externalizing environmental costs through fossil fuel dependency, resource-intensive logistics, and

ecologically disruptive deployments (Crawford, 2019). This approach, however, engenders strategic vulnerabilities: reliance on fragile hydrocarbon supply chains exposes forces to geopolitical instability, while climate-driven disasters disrupt deployment timelines and base functionality (DoD, 2021; NATO, 2021). The DoD Climate Adaptation Plan 2022 underscores that 60% of critical bases face climate-related threats, directly compromising readiness (DoD, 2022). Conversely, integrating renewable energy systems – such as solar microgrids in forward operating bases – reduces logistical footprints and enhances energy security, enabling sustained operations in contested environments (Dalby, 2020; Timmermans et al., 2024; UEDF, 2022).

2.4.2 ENVIRONMENTAL EFFICIENCY AS OPERATIONAL INNOVATION

Emerging research demonstrates that environmental efficiency initiatives can yield dual dividends. For instance:

- a) deploying hybrid-electric military vehicles to reduce fuel consumption by 20–30%, lowering emissions and refueling frequency in hostile zones (RAND Corporation, 2023);
- b) promoting circular logistics frameworks, such as The Netherlands Ministry of Defense’s ‘Green Base Initiative,’ which reduced material waste by 40% through 3D-printed spare parts and closed-loop water systems, cutting costs while enhancing self-sufficiency (Van der Zwaan et al., 2021);
- c) restoring mangroves around naval installations in Southeast Asia, mitigating storm surge risks by 25% and sequestering carbon (IPCC, 2022);
- d) advancing carbon neutrality through fleet electrification and AI-driven energy optimization, as demonstrated by Finland’s Defence Forces targeting 2030 goals (Finnish Ministry of Defence, 2022); and

- e) expanding renewable energy adoption and ecosystem restoration, including solar-powered NATO bases and African peacekeeping-led reforestation programs, cataloged in the Military Environmental Responsibility portal (Climate Sustainability Directory, 2024).

These cases exemplify the resilience-efficiency nexus, where sustainability measures directly contribute to mission assurance by reducing dependencies and vulnerabilities (Busby et al., 2022).

2.5 MILITARY LEADERSHIP FOR INTEGRATING CLIMATE MITIGATION AND ENVIRONMENTAL GOVERNANCE

To reconcile uncompromised operational effectiveness with environmental impact reduction, leadership paradigms must shift to grant sustainability strategic parity with mission readiness. Four complementary models – transformational, adaptive, systems-oriented, and ethical leadership – provide frameworks for defence organizations to embed climate mitigation and resilience across strategic frameworks and operations. Transformational leadership, as theorised by Bass and Riggio (2006), relies on crafting a compelling, values driven vision that links environmental stewardship directly to institutional identity and long term effectiveness. In Finland’s Defence Forces, for example, carbon neutrality has been reframed as a “readiness multiplier,” with electrification of facilities and AI driven energy management embedded into their 2030 operational goals (Finnish Ministry of Defence, 2022). By institutionalising green metrics – such as carbon budgets and lifecycle emissions – into commanders’ performance indicators, militaries can mirror the UK Royal Navy’s sustainable procurement reforms and foster intrinsic motivation for ecological innovation (Ministry of Defence, 2023).

Adaptive leadership, defined by Heifetz et al. (2009), enables organisations to tackle ‘wicked’ problems like climate change through iterative learning and decentralised decision making. The Netherlands ‘Green Base Initiative’ illustrates this approach: pilot programmes such as on site 3D printing of spare parts and waste reduction trials cut refuse by 40 % without compromising operational continuity (Van der Zwaan et al., 2021). Similarly, the U.S. Army’s partnerships with renewable energy firms to develop Net Zero bases demonstrate how cross sector coalitions can generate scalable solutions while preserving mission (Linnenluecke et al., 2021).

Systems oriented leadership employs holistic thinking to optimise resource flows, recognising interdependencies among logistics, security risks and ecological thresholds. The U.S. Army’s Net Zero Initiative exemplifies how waste to energy systems increase base autonomy and cut supply chain vulnerabilities (NATO, 2021). NATO’s Climate Change and Security Action Plan embeds resilience metrics in planning tools, ensuring that force posture remains aligned with scientifically derived planetary boundaries (Rockström et al., 2023).

Ethical leadership reframes environmental governance as a moral and strategic imperative. By emphasising intergenerational equity and a duty of care, commanders can counter narratives that sustainability undermines combat readiness. African peacekeeping contingents have pioneered reforestation programmes that reduce resource scarcity drivers of conflict while rebuilding critical ecosystems (Climate Sustainability Directory, 2024). Cost benefit analyses further validate such investments: Global Commission on Adaptation (2021) calculates a 4 to 1 return on sustainable infrastructure through avoided disaster relief expenditures.

Overcoming institutional inertia requires both quantifiable incentives – for instance, hybrid electric vehicles that cut fuel use by 30 % and extend operational range in austere environments (RAND Corporation, 2023) – and tactical synergies, such as

hydrogen powered stealth drones that combine low detectability with zero in flight emissions (DARPA, 2023; NATO; 2022). These examples demonstrate that green policies can directly enhance, rather than detract from, mission capability.

In sum, the old dichotomy between efficacy and efficiency belongs to a bygone era. Leading militaries are already proving that ecological realism – the strategic integration of sustainability into every layer of command – strengthens defence rather than diluting it. From mangrove restoration around forward bases (IPCC, 2022) to solar powered expeditionary camps (Climate Sustainability Directory, 2024), the transformation is underway. As future conflicts increasingly hinge on environmental resilience (Cóbar et al., 2022), armed forces must adopt pluralistic leadership frameworks that embed planetary stewardship at the heart of doctrine, training and procurement – thereby making environmental efficiency the modern foundation of security.

2.6 CULTIVATE CLIMATE LITERATE LEADERSHIP THROUGH ADAPTIVE TRAINING

Military academies must overhaul their curricula to embed comprehensive modules on climate science, systems thinking and sustainability ethics, thereby equipping future officers with the skills to address intertwined operational and environmental imperatives. By integrating adaptive leadership frameworks (Heifetz et al., 2009) with practical instruction in AI driven energy management – as exemplified by Finland’s Defense Forces – institutions can develop commanders capable of anticipating, assessing and mitigating complex socio ecological risks (Finnish Ministry of Defence, 2022). This interdisciplinary approach not only reinforces strategic foresight and resilience but also ensures that decision makers internalize environmental stewardship as a core dimension of mission readiness.

3. RESULTS AND DISCUSSION

Our research reveals that the global military sector contributes significantly to environmental degradation, accounting for 5-6% of total CO₂ emissions, with fossil fuel-dependent logistics, energy-intensive platforms, and unsustainable supply chains being primary drivers. As we have shown, some case studies demonstrate tangible progress in reconciling operational effectiveness with environmental efficiency.

We can also note that leadership models proved pivotal in overcoming institutional barriers. However, transformational leadership, as applied by the UK Royal Navy, institutionalized carbon budgets into performance metrics, fostering a culture of accountability, and adaptive leadership enabled decentralized innovation, exemplified by the U.S. Army's Net-Zero partnerships with renewable energy firms. However, systemic challenges persist, including cultural resistance to change, short-term budgetary cycles hindering green investments, and a lack of standardized metrics for tracking environmental impact.

These findings underscore the viability of integrating environmental efficiency into military doctrine without compromising mission readiness. The dual dividends observed in case studies, align with strategic efficiency frameworks (Bousquet et al., 2020; UEDF, 2022), which posit sustainability as a force multiplier. Transformational leadership's emphasis on values-driven vision (Bass & Riggio, 2006) and adaptive leadership's iterative problem-solving (Heifetz et al., 2009) mirror theoretical constructs, validating their applicability to climate governance in hierarchical institutions.

Contradictions persist between short-term operational priorities and long-term sustainability goals. For instance, while hybrid-electric vehicles reduce emissions and refueling needs, upfront costs and legacy infrastructure delays adoption – a tension noted in budgetary analyses (Bar-El et al., 2009). Yet, the resilience-efficiency nexus

demonstrates that environmental measures, such as ecosystem-based adaptation, directly mitigate climate risks to military infrastructure, thereby safeguarding operational continuity (IPCC, 2022; NATO, 2021).

The absence of binding transnational regulations remains a critical gap, as lax oversight in some regions exacerbates ecological harm (Mach et al., 2020). However, initiatives like the ‘EU’s Climate Defence Roadmap’ and NATO’s emissions-tracking protocols signal growing institutional alignment with global climate frameworks. The military’s capacity for large-scale coordination makes it vital in climate action. By integrating ecological priorities into training and procurement, it can redefine security, proving environmental stewardship as essential to modern resilience – not a compromise.

4. SOME RECOMMENDATIONS FOR ENHANCING SUSTAINABILITY IN THE MILITARY SECTOR: A SCIENCE-DRIVEN FRAMEWORK

4.1 POLICY INTEGRATION: INSTITUTIONALIZE COMPREHENSIVE ENVIRONMENTAL IMPACT ASSESSMENTS

To mitigate the ecological footprint of military activities, systematic Environmental Impact Assessments (EIAs) must be mandated for all operational planning phases, including exercises, deployments, and infrastructure development (Digital Commons, 2023). These assessments should quantify direct and indirect environmental externalities, such as greenhouse gas emissions, resource depletion, and ecosystem degradation, using standardized frameworks like the ecological footprint methodology (Wiedmann & Minx, 2008).

4.2 TRANSPARENCY AND REPORTING: ADOPT PARIS-ALIGNED ACCOUNTABILITY MECHANISMS

Military institutions should publish annual sustainability reports adhering to the transparency requirements of the Paris Agreement (UNEP, 2022). These reports must include granular data on Scope 1-3 emissions, renewable energy adoption rates, and progress toward circular-economy targets (for example, waste reduction, material reuse). The UK Royal Navy's integration of carbon budgets into commanders' performance evaluations provides a replicable model for aligning accountability with planetary boundaries (U. K. Ministry of Defence, 2023).

4.3 CROSS-SECTOR COLLABORATION: ACCELERATE GREEN INNOVATION THROUGH STRATEGIC ALLIANCES

Partnerships with academia, NGOs, and private-sector innovators are critical to advancing sustainable military technologies. Collaborative initiatives could focus on scalable solutions such as:

- a) bio-based materials, involving transitioning to biodegradable packaging and lab-grown protein to reduce supply-chain emissions, as highlighted in the Climate Sustainability Directory (2024);
- b) renewable energy systems, including deploying hydrogen fuel cells for naval fleets or AI-optimized microgrids for remote bases, with examples such as NATO's solar-powered installations, as set out by Linnenluecke et al. (2021).

4.4 EMBED SUSTAINABILITY INTO MILITARY DOCTRINE VIA REGULATORY ALIGNMENT

Military frameworks must integrate climate resilience and mitigation into core strategic documents, aligning with transnational standards such as the EU's Climate Defence Roadmap (2020) and NATO's emissions-tracking protocols (NATO, 2021). This includes revising procurement policies to prioritize low-carbon technologies (e.g., hybrid-electric vehicles) and circular-economy principles, as seen in Finland's carbon-neutrality targets for 2030 (Finnish Ministry of Defence, 2022).

5. CONCLUSION

The escalating climate crisis necessitates a paradigm shift in military strategy, transcending traditional trade-offs between operational effectiveness and environmental stewardship. As evidenced, climate change functions as a geopolitical threat multiplier, exacerbating security risks through resource scarcity, mass migration, and infrastructure vulnerabilities. Concurrently, the military sector remains a significant contributor to global, underscoring an urgent need for systemic reform. This duality demands that armed forces adopt strategic efficiency – a synthesis of mission readiness and ecological governance – to enhance long-term resilience while mitigating planetary degradation.

Key findings demonstrate that integrating environmental metrics into military doctrine, such as mandatory Environmental Impact Assessments (EIAs) and Paris-aligned sustainability reporting, reduces operational vulnerabilities. Case studies like Finland's carbon-neutrality targets (2030) and the Netherlands' 'Green Base Initiative' (40% waste reduction) validate the dual dividends of sustainability innovations, including hybrid-electric vehicles and circular logistics. Furthermore, transformational and adaptive leadership models prove critical in overcoming institutional inertia,

fostering climate-literate commanders capable of navigating socio-ecological complexities.

Cross-sector collaboration with academia and industry accelerates scalable solutions and ethical leadership frameworks further reframe sustainability as a moral imperative, exemplified by peacekeeping-led reforestation programs that address conflict drivers. In short, the military's unique capacity for large-scale coordination positions it as a pivotal actor in the climate transition. By institutionalizing ecological realism – embedding sustainability into every layer of command – armed forces can redefine security paradigms, ensuring the protection of both people and the planet. This transformation not only safeguards operational viability but also aligns defence institutions with global climate imperatives, proving that environmental efficiency – the foundational capacity to do more, with less and better – is the cornerstone of 21st-century security.

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