IMPRINT

Official publication of the Republic of Austria, Federal Ministry of Defence

MEDIUM OWNER, PUBLISHER AND PRODUCER:

Republic of Austria,
Federal Ministry of Defence (BMLV),
Roßauer Lände 1, 1090 Vienna

EDITORIAL OFFICE:

BMLV, Institute for Basic Officer Training,
Theresan Military Academy,
together with
The Defence Horizon Journal,
ISSN: 2710-3722

COVER DESIGN, TYPESETTING AND LAYOUT:

Lukas Bittner
Cover picture:
BMLV/Daniel Trippolt

PRINTING:

BMLV / Army Printing Centre (Heeresdruckzentrum),
Arsenal, 1031 Vienna, Kelsenstraße 4

ISBN: ISBN: 978-3-9504893-5-4

December 2022

ARMIS et LITTERIS
und
THE DEFENCE HORIZON JOURNAL

THE ART OF LEADERSHIP

THERESAN MILITARY ACADEMIC FORUM 2022

PUBLICATION SERIES OF THE THERESAN MILITARY ACADEMY
40th EDITION

More Information

https://www.milak.at/tmaf2022

and

https://www. https://www.thedefencehorizon.org/

VORWORT

Sehr verehrte Damen und Herren!

Das Thema des Theresianischen Militärakademischen Forums 2022 war „Die Kunst des Führens". Aufbauend auf dem vorjährigen nationalen Symposium zum selben Thema wurde heuer die internationale Sicht auf die Thematik in den Fokus gestellt. Welche Herausforderungen und Voraussetzungen sind für eine kunstvolle Führung zu berücksichtigen? Es konnte auf eine breite Expertise der Vortragenden zurückgegriffen werden, um diese Frage zu beantworten. Die Gegenüberstellung von Handwerk und Wissenschaft wurde dabei aus verschiedenen Perspektiven abgehandelt.

Moderne Konflikte zeichnen sich vor allem durch die Verschleierung der Wirklichkeit aus. Diese Verschleierung der Wirklichkeit ist als hybride Konfliktaustragung heute wieder in aller Munde. Die Herausforderung dabei ist, dass diese Konfliktform alle Bereiche der Gesellschaft betreffen kann. Die militärische Komponente ist nur eine von vielen, die Kunst bei der Lösung solcher Konflikte ist es, gesamtstaatlich zu antworten. Dies bedingt eine breite Auseinandersetzung mit den gegenwärtigen, aber vor allem künftigen Bedrohungen, denen sich der Staat und die Gesellschaften zu stellen haben.

Für potenzielle Führungskräfte ist diese Auseinandersetzung eine wichtige Aufgabe. Die Kunst des Führens findet sich nicht nur in einer kreativen Entscheidungsfindung, sondern vor allem im Erkennen von Bedrohungen wieder. Der Führungserfolg ist letztendlich von mehreren Faktoren abhängig, vom Erkennen der Bedrohung oder Herausforderung, der richtigen räumlichen und zeitlichen Distanz zum Geschehen und daraus resultierend von der Möglichkeit Entscheidungen ohne gravierende Einflüsse von außen zu treffen. Dies trifft nicht nur auf die militärische Führungskraft zu, sondern ist auf alle Entscheidungsträger anzuwenden.

Was zeichnet in diesem Zusammenhang kompetente und erfolgreiche Führung aus? Führungskompetenz kann im Wesentlichen an drei Faktoren festgemacht werden. Führung ist immer für, mit und/oder gegen Menschen gerichtet. Zudem ist erfolgreiche Führung immer von erfolgreicher Durchführung abhängig. Die Führungskraft kann nur durch eine erfolgreiche Durchführung der Geführten zum Erfolg kommen. Dies bedingt die Beauftragung der „richtigen" Menschen mit der konkreten Lösung des Problems. Menschenorientierung ist hier zusammengefasst der erste Faktor erfolgreicher Führung.

Auf der Wahrnehmung der Bedrohung oder Herausforderung baut die Auswahl der richtigen Führungsmaßnahmen, die Wahl eines entsprechenden Führungshandelns auf. Das Anpassen der Führung an die jeweilige Situation kann hier als Adaptionsfähigkeit verstanden werden. Als dritten und letzten Faktor muss man eine Bereitschaft zur Entscheidung anführen. Jede Entscheidung birgt die Angst vor der Entscheidung mit sich. Diese Angst sich für eine Option zu entscheiden, sich also von den anderen Optionen zu trennen, muss von der Führungskraft überwunden werden.

Das heurige Symposium im Rahmen des Theresianischen Militärakademischen Forums mit dem Titel „Die Kunst des Führens" hat im Sinne der beschriebenen Faktoren dazu beigetragen Führungskompetenz zu entwickeln und so in Zukunft Führungserfolg zu ermöglichen. „Die Welt, in der wir leben, ist gefährlich, unübersichtlich, bisweilen auch unberechenbar. In einer solchen Zeit brauchen wir Akademiker und Experten mehr denn je."[1] Wurde im heurigen Symposium die internationale Sicht auf die Kunst des Führens abgedeckt, so wird im Theresianischen Militärakademischen Forum 2023 eine besondere Herausforderung an unsere Führungskräfte – der „Cognitive Warfare" – auf internationalem Niveau diskutiert. In Erwartung höchst interessanter Sichtweisen bedanke ich mich für Ihr Interesse am vergangenen Symposium und freue mich Sie bei der kommenden Veranstaltung im November 2023 an der Theresianischen Militärakademie begrüßen zu dürfen.

Die wissenschaftliche Leitung des Theresianischen Militärischen Forums

Oberst des Generalstabsdienstes Prof. (FH) Ing. Mag. (FH) Georg Kunovjanek, MSD PhD

[1] Ansgar Rieks, Geistiger Stillstand ist Rückschritt: Gedanken zu „Bildung und Offizierberuf", German Institute for Defence and Strategic Studies, Hamburg 2021, 4.

FOREWORD

Ladies and Gentlemen!

The theme of the Theresan Military Academic Forum 2022 was „The ART of Leadership". TMAF 2022 built upon the previous year's national forum on the same topic; this year's focus was on the international perspective of the subject. At TMAF 2022, we asked: what challenges and prerequisites must be considered for artful leadership? It was possible to draw on the broad expertise of the speakers to answer this question. The juxtaposition of craft and science was dealt with from various perspectives.

Above all other characteristics, modern conflicts are characterised by their concealment of reality. This concealment has returned to vogue as ‚hybrid conflict'. The challenge facing us is that this form of conflict has the potential to affect all aspects of society; thus, the military component becomes only one of many. Therefore, we must accept that the art of resolving such conflicts is to respond to such as a whole society. Such a response requires a broad discussion of the current, but more crucially, future threats that the state and societies will face.

For potential leaders, this confrontation is an important task. The art of leadership is not only found in creative decision-making but also in threat recognition. Leadership success ultimately depends on several factors: in recognising a threat or challenge, having the proper spatial and temporal distance from the event, and, as a result, possessing the ability to make decisions without serious external influence. These factors are not exclusive to the military leader, but rather, they apply to all decision-makers.

What characterises competent and successful leadership? Three factors can essentially define leadership competence. Leadership is always directed—with and/or against people. Furthermore, successful leadership is always dependent on successful execution. This requires assigning the correct people and solutions to the problem. Therefore, people orientation is the first factor of successful leadership. The second factor is adaptability, selecting suitable and appropriate leadership measures and actions based on the perception of the threat or challenge. The third and final factor is the willingness to make decisions. Every decision involves the fear of making a decision. A leader must overcome the fear of deciding in favour of one option and, therefore, against the other options.

This year's Theresan Military Academic Forum, titled „The Art of Leadership," contributed to developing leadership competence in the sense of the factors described above, thus enabling leadership success in the future. „The world we live in is dangerous, confusing, at times unpredictable. In such a time, we need academics and experts more than ever."[1] If this year's forum covered the international view of the art of leadership, the Theresan Military Academic Forum 2023 would discuss a particular challenge facing our leaders, „Cognitive Warfare," on an international level. In anticipation of exciting perspectives, I thank you for your interest in the past symposium and I look forward to welcoming you in November 2023 at the Theresan Military Academy.

The Scientific Director of the Theresan Military Academic Forum

Colonel of the General Staff Prof. (FH) Georg Kunovjanek, MSD PhD

[1] Ansgar Rieks, Geistiger Stillstand ist Rückschritt: Gedanken zu „Bildung und Offizierberuf", German Institute for Defence and Strategic Studies, Hamburg 2021, 4.

EINLEITUNG

Das diesjährige Theresianische Militärakademische Forum (TMAF) mit dem Titel „The ART of Leadership" wurde heuer erstmals im europäischen Rahmen durchgeführt. Ziel und Zweck des Symposiums war es einerseits durch den aktiven Austausch von Erkenntnissen und Gedanken die Bildung des erforderlichen Bewusstseins für die Besonderheiten der militärischen- sowie der zivilen Führung zu fördern. Andererseits sollten durch die Reflexion des sich ständig ändernden Umfeldes ziviler sowie militärischer Besonderheiten zur Weiterentwicklung der Militärwissenschaften erfasst werden. Daraus werden dann Möglichkeiten zur erforderlichen stetigen Optimierung der Vermittlung beziehungsweise Aneignung militärwissenschaftlicher Fähigkeiten und Fertigkeiten zur Entwicklung militärischer Führungskompetenz abgeleitet werden.

Die gegenwärtigen gesellschaftlichen Herausforderungen, wie zum Beispiel die Nachwirkungen der COVID-19 Pandemie im Gesundheitswesen, die Asylkrise, der Klimawandel sowie ein in Europa für nicht mehr möglich gehaltener militärischer Konflikt in der Ukraine fordern die politische- sowie die militärische Führung. Diese gegenwärtigen und zukünftigen globalen Herausforderungen kann kein Land alleine bewältigen. Sie brauchen aufgrund der fortgeschrittenen europäischen Integration auch umfassende europäische Antworten.

Aus diesem Grund muss die praxisbezogene und wissenschaftlich fundierte Ausbildung der zukünftigen militärischen Führungskräfte die Fähigkeiten entwickeln, sodass die aktuellen und die zukünftigen Problemstellungen gelöst werden können. Das setzt anwendungsbezogene Forschungs- und Entwicklungsarbeit durch das Lehr- und Forschungspersonal an den hochschulischen Ausbildungsstätten voraus. Die dabei gewonnenen Ergebnisse müssen durch Publikation und/oder Veranstaltungen in den wissenschaftlichen Diskurs eingebracht werden. Durch die eingegangene Kooperation mit der wissenschaftlichen Plattform „The Defence Horizon Journal" (TDHJ) wird diese Absicht unterstützt. TDHJ publiziert unter anderem Beiträge zur Sicherheitspolitik, Geopolitik und Recht, Konflikt- und Fragilitätsforschung, Wehrtechnik sowie eben die Militärwissenschaften und ihre Anwendung. Dadurch können die Analysen, Schlussfolgerungen und Empfehlungen des TMAF einem wesentlich größeren Kreis interessierter Leserinnen und Lesern global zugänglich gemacht werden.

Das Theresianische militärakademische Forum (TMAF) bot und bietet die Möglichkeit für den wissenschaftlichen Austausch. Dabei sollen mögliche Konsequenzen für die Ausbildung der zukünftigen militärischen Führungskräfte abgeleitet und diskutiert werden. Damit ist das TMAF eine sinnvolle Ergänzung zum jährlich stattfindenden international

Military Academic Forum (iMAF). Das iMAF ist eine wissenschaftliche Arbeitsplattform für die Weiterentwicklung der europäischen Offiziersgrundausbildung, welche die Entwicklung einer europäischen Sicherheits- und Verteidigungskultur durch Austausche von Studierenden und Lehrkräften sowie Kooperationen zwischen den Institutionen. In Symbiose können das iMAF und das TMAF mögliche Antworten auf die gegenwärtigen und zukünftigen Herausforderungen generieren.

Wir setzen den eingeleiteten europäischen Diskurs im Folgejahr von 6. – 11. November 2023 fort. Der Titel des TMAF 2023 ist „Cognitive Warfare". Wir würden uns daher freuen, wenn wir Sie sich dazu mit einem Beitrag bewerben und/oder als mitdiskutierende Teilnehmerin beziehungsweise Teilnehmer an der Theresianischen Militärakademie begrüßen könnten.

Der Organisationsleiter

Michael Moser

PREFACE

This year's Theresan Military Academic Forum (TMAF), titled „The ART of Leadership", was held for the first time within a European framework. The aim and purpose of this year's symposium was, on the one hand, to promote the awareness and formation of the unique features of leadership—military and civilian—through the active exchange of knowledge and ideas. On the other hand, through reflections on our continuously changing environments—civilian and military—specific areas of further development of military science are identifiable. From this, the possibilities for constant optimisation of teaching and acquiring military science skills and abilities for developing military leadership competence should be derived.

The current challenges for society, such as the consequences of the COVID-19 pandemic, the European migrant crisis, climate change, and war in Ukraine—which is of the sort that was thought to be no longer possible in Europe—demand political as well as military leadership. These current and future global challenges cannot be met by any single country alone and, due to advanced European integration, also require comprehensive European responses.

For this reason, future military leaders' practice-oriented and scientifically based training must develop the cognitive skills to solve current and future requirements. This goal requires application-oriented research and development work by higher education institutions' teaching and research staff. The results must be introduced into the scientific discourse through publication and/or conferences. This intention is facilitated by the cooperation with the scientific platform, „The Defence Horizon Journal" (TDHJ). The TDHJ publishes articles on security policy, geopolitics and law, conflict and fragility research, defence technology, and military science and its application. Through this partnership, the analyses, conclusions and recommendations of the TMAF are made accessible to a much wider audience.

The Theresan Military Academic Forum (TMAF) offered and still offers the opportunity for scientific exchange. Possible consequences for the training of future military leaders are to be derived and discussed, making TMAF a valuable complement to the annual international Military Academic Forum (iMAF). The iMAF is a scientific working platform for the further development of European basic officer training, which supports the development of a European security and defence culture through student and instructor exchanges and cooperation between the institutions. In symbiosis, the iMAF and the TMAF can generate possible answers to current and future challenges.

We will continue the initiated European discourse next year, from 6th – 11th November 2023. The title of TMAF 2023 is „Cognitive Warfare." We would therefore be very pleased to welcome your participation in the discussion on this contemporary topic at the Theresan Military Academy.

The Head of Organisation

Michael Moser

CONTENT

01

THE ART OF LEADERSHIP – UNUSUAL CONNECTION OF TWO WORLDS

ALŽBETA BUDINSKÁ

- **Author:** Cadet Alžbeta Budinská, cadet of the Armed Forces Academy of General Milan Rastislav Štefánik, student in the 5th-year study programme in State security and defense. The views contained in this article are the author's alone and do not represent the views of the Armed Forces Academy of General Milan Rastislav Štefánik.

- **Abstract:** This article aims to explain and evaluate the importance of leadership in a military environment. Proper leadership as a tool for prospering and efficient functioning has become the driving force for many civilian organizations. In recent years, its importance also penetrated the military world and transformed it into a modern and efficient organization. Leadership is a process that requires creativity, daring, and a lot of skills to become effective. This article analyzes some of the skills and methods that every good leader should master to motivate his subordinates to follow him and achieve the goal together.

- **Problem statement:** How to explain the role of a leader and leadership as a process?

- **Bottom-line-up-front:** Military leadership displays specific aspects that can be examined. Several parallels with art in its classic sense may be observed as a dynamic process, such as creativity. Every leader chooses his colors and style to create – and to lead.

- **So what?** A thorough analysis of the meaning of leadership itself is the basis for understanding it. Understanding provides the basis for effective implementation into the daily life of the unit and the armed forces as a whole. The art of leadership shall be taught to future leaders on all levels. Military academies and other educational institutions with experienced lectors shall provide the newest leadership trends to military leaders throughout their careers.

Leadership, Leader, Command and Control

When it comes to fulfilling the mission, everyone desires to win, and people doing the fighting want to believe in the mission's purpose.[1] This statement very roughly outlines the purpose of leadership. When defining leadership, we start by examining numerous definitions of leadership by various authors that can be found in the literature. One of them defines leadership as "the process of persuasion or example by which an individual (or team) induces a group to pursue objectives held by the leader or shared by the leaders and their followers".[2] Another definition focuses on „persuading others by an individual or a team of leaders". According to this idea, leadership represents „a process that promotes achieving goals".[3] Leadership may also be defined as „the effort to force people to perform tasks willingly on behalf of the leader". This effort is based on the leader's charisma, their behavior, and the enforcement of their opinions".[4] Indeed, leadership should be efficient. Efficient leadership is performed in a process where an individual or a group of people succeed in their effort to define the reality of others, by which they manage to make others adopt their opinions. is the leader aims to set the direction and recruit people to follow it.[5]

In comparison to command and control, leadership is based primarily on defining the aim and motivating people to strive to achieve the aim. At the same time, the leader is characterized by greater authority followed by greater responsibility. The main tasks of a leader today include:

- high-level performances, which ensure the prosperity of the organization while motivating others to perform on a high level;
- take higher responsibility and strive to ensure the welfare of their subordinates;
- helping individuals with their personal growth and development and, eventually;
- prepare them for promotions.[6]

The essence of leadership should not be viewed just from one point of view, i. e., the command of several basic competences or styles of leadership. Instead, leadership should be viewed as an overall change of mind, behavior, and understanding of the issues of leading people. Leadership is about the preparedness and willingness to cooperate and positively affect people. According to M. R. Covey, leadership means that a leader expresses the value and potential of their subordinates in such a way that they start to realize it by themselves.[7] In simple terms, understanding leads to willingness, and willingness leads to better performance.

Thus, the aim of leadership is clear: to make people do what they should to support the mission and the team. However, the performances vary from person to person. Leadership consists of many aspects that each leader must discover to achieve unique know-how.

Leaders vary, subordinates vary, colleagues and superiors vary. Each person has its individual characteristics and traits, and world views. Therefore, leadership becomes a difficult and complex area.[8]

Leaders' tendency to act a certain way in different situations, or in other words, their personalities, can highly affect the process of leading. Their ability to influence others even when they disagree, willingness to take charge and get things done, and strength in times of crisis or in the decisive moment can set the course of the whole mission. Their decisions could differ whether they are open to new ideas, cautious, responsible or careless, energetic or reserved, compassionate or critical, or anxious or confident. Disagreements are frustrating and time-consuming. Good leaders should be able to find a solution quickly, cope with different personalities, including their own and find an efficient way to „blend the different colors into convenient shade". Leaders should manifest various character traits that help them lead a group of people, whether small or big. In fact, it is very difficult to name just several of these traits considered crucial.

The question of whether leaders are born or made can be answered as follows: some are born with typical leadership traits. They are charismatic, talkative, witty, decisive, able to take risks even if others hesitate, and they can remain level-headed even in chaotic and extremely tense situations. This does not mean those lacking these traits cannot become efficient leaders. In fact, those who are willing to learn, humble, willing to improve and seek constructive criticism, disciplined and trained, and who can develop these traits even if they are not born with them. Such training is crucial, as, without it, no leader can develop the basic skills or obtain a reasonable level of certainty regarding their ability to communicate and lead. Leadership comes in several basic forms, in which we may examine the leader´s traits; while some may manifest greater talent to lead, others may not, but it is still possible to train these traits. Each leader must understand that their behavior affects the behavior of their subordinates.[9]

To build and strengthen the organization, there are four processes or concepts that all leaders perform – concepts that drive the organization forward and create its very base. Leadership blending with management, command and control gives the organization the ability to focus on opportunities and deal with threats[10]:

- Leadership drives the interpersonal aspects of the organization, such as morale and team spirit.
- Management deals with the conceptual issues of the organization, such as planning, budgeting, and organizing.

- Command guides the organization with well-thought-out visions that make it effective.
- Control provides structure to the organization to make it more efficient.[11]

Veber defines "command and control as the set of all activities needed to be performed for the proper functioning of organization".[12]

However, Bělohlávek considers command and control "a process of systematic planning, organizing, leading people to achieve its assigned goals".[13] These definitions describe the activities to achieve each organization's objectives successfully. Control stems from effective coordination and deciding on what and when to perform tasks and who is responsible for the tasks. The organization's role is to achieve the goals with the least possible costs at the highest possible level of quality.

At present, two levels of command are distinguished: command of people in managerial activities and leadership. A good manager leading others to follow an organization's aims is not necessarily a good leader.[14] The differences between command and control, manager and leader, have been described especially by P. F. Drucker: control means doing things well, and command means the right things are being done".[15]

Military Leadership

Typical features can characterize military leadership because its environment is typical for several levels of command, where obedience and following orders are required. The ability to lead people is required of commanders on the highest levels and all levels of command. Various military operations test the commanding abilities of commanders, who must accept the following facts:

- nothing is certain;
- the success of the selected strategy depends on the responsible approach to solving each situation;
- there are no second chances; thus, all tasks must be performed at full speed;
- whatever happened cannot be undone; and
- each operation comes with the commander´s responsibility for concrete decisions.[16]]

Besides these, a future leader must embrace some other facts, such as:

UNDERSTANDING – the leader bears the responsibility for his world and all included in it;
EMOTIONS – reasonable use of emotions, being professional – objective, and impartial;

EGO – controlling oneself;
LEARNING – never-ending process, being able and willing to learn; and
STANDARD – using standards enhances good results and gives space for motivation, enforcement measures, and monitoring.

Functional leadership is especially crucial in specialized military units such as SOF. These units are characterized by their wide range of capabilities operating in high-intensity combat areas. Regarding these operations, the unit might lose its commanders, and it is necessary that any other unit member replaces them. Therefore, each unit member must be able to lead and accomplish the mission. Some aspects of this practice could be used in the training of other units. The first important step to accomplishing the mission is understanding. If a soldier doesn't understand why and how to do so, they cannot bring their creativity to the table, they cannot continue if communication to a superior level is lost. Every professional soldier shall be ready for such situations. Thus, all professional soldiers shall be trained in leadership.

Military leadership consists of a set of competences, by which commanders command their subordinates, develop their skills and knowledge, and form their attitudes within various situations. A military leader should also be able to motivate his subordinates to be willing to perform all tasks with full dedication. The commander must comply with the rules when achieving goals, thereby setting an example for his subordinates. Each commander must be aware that he performs three important tasks; the role of the leader, the role of the manager, and the role of the coach. As a leader, he sets goals, simultaneously represents how specific goals will be fulfilled, and inspires his subordinates to fulfill them. In the position of a manager, he assigns tasks, effectively uses the assigned forces and resources, supports subordinates in the performance of tasks, evaluates them, solves operational situations, manages changes related to the fulfillment of goals, and controls the fulfillment of tasks. In the position of a coach, he supports the development of the abilities of his subordinates and leads them to independence. The position of leader and manager can be applied in both peace and combat situations, while in combat situations, the leader should prefer the position of leader, which is more effective for subordinates. The position of a coach can be used to the fullest earlier in a peaceful life.[17]

Leadership experience exists in various forms. From a career with direct subordinates to an individual contributor who serves as a role model, the path to leadership in an organization does not represent a straight line. Although the transition from the military to the civilian world has its pitfalls, much of the leadership experience gained during a military career also serves well in the civilian world. The experience of military veterans has proven

to be very beneficial for a wide range of civilian organizations, and the military method of leading a team is becoming increasingly popular. The explanation for this phenomenon can be simple. The military world exposes leaders and their subordinates to complex situations where their abilities are shown and can be used to the maximum. Whether it is the daily life of a unit or the combat operation itself, leaders are responsible for the lives of their subordinates and completing the task. In situations they normally encounter, commanders must be able to make a quick and effective decision, anticipate its consequences and calculate with the available resources, often in seconds. This requires perfect knowledge of the subordinates and qualities that allow for completing an incomplete image. That is why military leaders are some of the most effective leaders ever.

There is an interesting tool the military commander has at his disposal. The behavior management system that comes from the military is „optimal communication for adaptability." The idea behind this methodology is that team members' recorded statements and behaviors can be analyzed later to derive consequences for the mission that the Head of Mission is unlikely to recognize otherwise: team morale and the state of the mission. Thus, in simple terms, the tool is feedback from its subordinates in the form of reports, which provides the commander with a so-called „ helicopter view" on the general condition and helps him complete an incomplete picture.

Maintaining a „helicopter view" through data collection could be an ingredient that distinguishes a successful organization from an unsuccessful one. Although many civilian organizations have adopted this approach, they struggle to apply the data obtained in practice. For example, (not) dealing with toxic relationships in the workplace is still a barrier to achieving productivity.

If the unit commander wants to be perceived as a leader, s/he should adopt the following important principles:

- **Leadership is Everyone's Business** — being a good commander (leader) and leading people is not just for those who have innate leadership qualities or for those chosen for leadership positions, but for everyone. This may be more difficult for some, but everyone should master the basic qualities of a commander.
- **The Basis of a Good Commander is His Character Trait Built On Credibility, Which Motivates Subordinates to Voluntarily Follow Him** — character credit consists of several important qualities of the commander. These qualities are later reflected in behavior and leadership.

- **The Personal Values of the Commander Encourage the Preoccupation of Others** — the commander is expected to be transparent to others and to be able to sell these values to subordinates. From this point of view, the best commanders are those who can connect their values with those of their subordinates.
- **The Commander Either Commands by Example Or Does Not Command at All** — the actions of the commander should be in accordance with his values in order to convince subordinates that his values are really important.
- **An Important Prerequisite for Successful Leadership is to Look Ahead** — every good commander should have visions about the unit's progress and be able to deliver on their visions. The ability to demonstrate to the unit a tangible vision for the future significantly distinguishes the commander-leader from commanders who cannot do this.
- **Leadership is Not Just About a Commander's Vision** — a good commander must understand people and have social feelings.
- **Changes are Opportunities for Development** — the commander must be able to deal with any changes and use them for the benefit of the unit.
- **The Commander is a Team Player** — the commander himself will never achieve anything. All achievements are in synergy with the subordinates he commands.
- **Leadership is a Relationship** — when leading, a commander must realize that his relationship with subordinates should be dynamic and have respect, trust, and support.
- **The Heart of Leadership is to sit carefully** — a commander honors and respects the emotions and needs of his subordinates.[19]

In a military environment, leadership is divided into three levels of command, depending on the military organization:

- Direct Leadership – or even face-to-face leadership – is typical of squad, platoon, or company commanders. These commanders are involved in their subordinates' personal education, exercise, and upbringing.
- Organizational Leadership – this level of command is typical for commanders of battalions, brigades, regiments, and above. This chain of command requires skills to prepare and manage the complex nature of the exercises.
- Strategic Leadership – this is the highest degree of leadership exercised by a different element of structure, depending on a country's structure and organization, such as the General Staff. Within this level of command, tasks with a high degree of complexity are performed, which are generally related to the political situation in the country.[20]

When it comes to strategic leadership, we may not forget his counterpart, tactical leadership. Although we may find some similarities with the levels of command, the comparison of strategic and tactical leadership is not a structural issue but a difference in styles. Both tactical and strategical leadership can be applied to all levels of command, but their use is more or less appropriate depending on the individual levels. It's for the best to create a balance between them.

Tactical leaders focus on the literal tactics, or maneuvers, that are needed to get what needs to be done. It's a relentless daily focus on checking off tasks. They can manage and maneuver through critical incidents and try to shift things around to maximize efficiency. Their approach to work is one of logic, which is supported by an underlying rationale that supports that logic. Major strides in what gets done today are given attention, commendation, and celebration to produce a tactical advantage. The disadvantage of tactical leaders is that they can lose sight of the vision — of where the company wants to go. They don't always lead people around them to understand that longer-term picture. Because they like the efficiencies that established systems and processes bring to the company, they aren't masters of change management.

On the other hand, strategic leaders are always thinking about the long-term implications of what they're doing. As a result, their work is almost always determined by the bigger picture, the longer-term vision around what we're doing today—and how it links to a future state. The advantage of strategic leaders is that they focus on the longer-term vision and plan accordingly. As a result, they have an almost natural preference for solving problems, removing roadblocks, and figuring out what needs to change. The disadvantage of strategic leaders is that they can focus almost too much on future intent. While that can be inspirational, they can get "lost" in their vision and lose sight of current reality.

Communication In Military Leadership

Another inherent feature of a military commander and the cornerstone of leading people is the ability to communicate effectively. If a leader wants to manage people successfully, they must be able to communicate with them at different levels. There is no general guide to successful communication since each character is specific to something else. For the leader, it should be important to know what factors influence a given communication, how to use the generally applicable rules and principles, and the communication conduct. Knowledge of the basic parameters, rules, and principles of communication helps to cope with communication situations of all kinds.[21]

Who or what motivates soldiers? The most probable hypothesis is that a military commander's motivating-that the inspirational function is personally fulfilled. However, there are situations that a formal commander is just a coordinator of work (manager), and commanding functions, including motivating-inspirational functions, are realized by an informal leader, naturally selected from a group. As a matter of fact, the aim of leadership is: "the ability to influence others, their will to change attitude and values".[22] Consequently, the aims of leadership are nearly identical to the objectives of communication. Therefore, communication should be considered as an indispensable element of leadership. Only thanks to appropriately applied communication tools obedience can the trust, respect and loyal cooperation of the "own men" be obtained. Certainly, this is not an easy task.[23]

In the military environment, the method of communication between the commander and their subordinates is regulated by internal regulations, based on which both parties must comply with certain specific rules. Since commanders are mostly role models for their subordinates, they should follow these rules. In the military environment, various terms are also used that are specific to this area and also greatly affect the possibility of communication.

The specific peculiarities of communication in a military environment include brevity, volume, and objectivity. Expressing any emotions is not desirable. In this environment, commanders, whether in smaller or larger units, are often exposed to the need to talk to more people, which is associated with nervousness, and the source of stress they have to manage in a given situation. The commander in his position will get used to these ceremonies for a long time and learn to communicate with an audience.[24]

In combat situations, communication between a superior and a subordinate can be significantly influenced by the circumstances in which both persons find themselves. Adverse conditions can cause increased stress, which provokes chaoticness in a person, quick and ill-considered decision-making, or a pronounced manifestation of emotions. The leader, in this case, is expected to be able to communicate clearly and effectively, where they must demonstrate decisiveness, clear judgment, and instructions based on the provided information. Subordinates rely mainly on their commander in combat, so they should be able to communicate in any situation.

As part of crisis intervention, the commander should be able to provide special interviews with individuals and, where necessary, with entire units. In the case of an individual, it is an individual structured conversation called defusing, and in the case of a group, it is a debriefing. Defusing is a private conversation of the commander with a subordinate,

where the subordinate tells the commander all the things that weigh on him. As a rule, a subordinate confides in the commander only if they see the support and fully trust them. Debriefing is a group conversation where important events are discussed. This kind of conversation allows one to relive the whole event or situation together with colleagues and thus relieve the stress or pressure that the situation could generate.[25]

Most commanders in the army are located at a certain level of the communication system, where they must hold several roles. The commander is usually expected to collect information and process and report the accumulated information quickly and efficiently. In a hierarchical organization such as the armed forces, the prompt transmission of information is very important and represents the basis for the success of any action.

Communication is the foundation for success in any organization. Not only communication experts but also professional experience confirms that high-quality internal communication is a fundamental process essential for the organization's effective functioning and management. Quality communication has positive, motivating effects on employees, satisfaction, and willingness to stay in a given organization for a long time.[26]

The leader performs an important role as a communication hub in the military organization. The functioning of the entire communication system depends on its capabilities to receive, process, and further distribute information in performing tasks. Using his communication skills, the leader represents the organization among other entities. Communication is not only the process of transmitting information but also the main tool for influencing people. With the help of communication, the leader must be able to influence subordinates to fulfill the visions and goals of the organization.

The leader is expected to be equally effective, factual, and correct, both in peace and wartime conditions. The unit primarily relies on the fact that the commander can rationally process information, even in mentally difficult situations, based on which s/he makes the right decisions. The aim of the educational and didactic activities of military academies is to ensure that a graduate can create such emotional relationships with her/his subordinates which make her/him an unquestioned leader when such a need comes. During peace, such bonds are to be built to encourage soldiers to follow their leaders, enabling them to present analogical behaviors during combat. Achieving such an end state is possible only under systematic work with a team and under the condition of possessing structured knowledge and professional skills.[27]

So, in short, the commander needs to adhere to the principles of effective communication adapted to the military environment. These principles can be summarized in the following areas:

- **UNDERSTANDING** – to understand and be able to explain, if a commander wants to inspire and be followed must believe in the task. To achieve a goal, faith is often much more important than training or equipment;
- **SIMPLICITY** – understanding subordinates lies in the brevity and clarity of task assignments;
- **RELATIONSHIPS** – top-down and bottom-up leadership, feedback;
- **PLANNING** – awareness, shared creativity, lessons from the past;
- **PRIORITISATION** – releasing the pressure by gradually completing tasks;
- **COMMAND** - decentralized and demarcated;
- **DECISION-MAKING** – the ability to complete an incomplete picture based on available information and then make a decision;
- **TEAMWORK** – coverage and movement, mutual cooperation, complementarity; and
- **BALANCE** - respect versus humility as two sides of the same coin.

Conclusion

If leadership is an art, then may leaders be the artist. It is more or less up to them to pick a material, color, and style to create what they aim for. Despite the simplicity of this statement, leadership requires a lot of will and determination. The definition of the word 'correctly' remains the same for both art and leadership: there are an infinite number of correct answers.

Leadership is one of the most important industries for a future officer. Every academy graduate becomes a leader at a certain level of command structure. In the Slovak Republic, the graduates of the Armed Forces Academy of General Milan Rastislav Štefánik start with the rank of lieutenant and become commanders of a platoon. Already at this level comes the first experience with leadership, so it is important that already after graduation, the graduate is ready to command the unit. The power of leadership in the Slovak Armed Forces is significant, and its principles are taught to future officers throughout their studies.

As a dynamic process, leadership has several parallels with art in its classic sense of the term, which may be observed, such as creativity. The most important colors on the palette of military leadership include communication, standards, know-how, and the whole spectrum of abilities, skills, and experience, mixed with a bit of talent, leading to the creation of the final work of art.

Endnotes

[1] Chip Laingen, "Ten military leadership principles that translate to business," MINNEAPOLIS / ST. PAUL BUSINESS JOURNAL LEADERSHIP TRUST, February 15, 2022, last accessed October 12, 2022, https://www.bizjournals.com/twincities/news/2022/02/15/ten-military-leadership-principles-that-translate-to-business.html.
[2] John W. Gardner, On Leadership (New York: The Free Press, 1990), 18.
[3] S. Steigauf, Vůdcovství, aneb, Co vás na Harvardu nenaučí, (Praha: Grada Finanční řízení, 2011), 45.
[4] J. Dědina, V. Cejthamr, Management a organizační chování: manažerské chování a zvyšování efektivity, řízení jednotlivců a skupin, manažerské role a styly, moc a vliv v řízení organizací (Praha: Grada. Expert (Grada), 2005), 94.
[5] M. Armstrong, Management a leadership. 1. vyd (Praha: Grada Publishing, 2008), 16.
[6] I. Nekvapilová I., kol. Úvod do vojenského leadershipu (Brno: Univerzita Obrany, 2018), 10.
[7] J. Stýblo, Leadership: realita nebo vize (Praha: Professional Publishing, 2012), 75.
[8] Jocko Willink, Leadership strategy and tactics, Field manual (London: St. Martin's Press, 2020), 3.
[9] P. G. Northouse, Introduction to leadership. Fourth Edition (London: Sage publications, Inc., 2018), 5.
[10] Department of the Army, Command, Leadership, And Effective Staff Support, Washington DC: The Information Management Support Center Pentagon, 1996.
[11] D. R. Clark, Big Dog and Little Dog's Performance Juxtaposition, December 01, 2011, last accessed October 12, 2022, http://www.nwlink.com/~donclark/leader/LMCC.html#:~:text=This%20blending%20gives%20the%20organization%20the%20ability%20to,organization%20in%20order%20to%20make%20it%20more%20efficient.
[12] Jaromir Veber, Management, Základy, moderní manažerské přístupy, výkonnost a prosperita (Bratislava: Mnagement Press, 2009), 17.
[13] František Bělohlávek, Pavol Košťan, a Oldřich Šuleř, Management (Olomouc: Rubico, 2001), 4.
[14] I. Nekvapilová I., Úvod do vojenského leadershipu (Brno: Univerzita Obrany, 2018), 9.
[15] P. Drucker, Výzvy managementu pro 21. století (Praha: Management Press, 2000), 125.
[16] I. Nekvapilová, Metafora horizontu jako metodologický nástroj modernizace managementu. Etické konsekvence proměny horizontú v teoriích řízení (Nitra: Univerzita Konstantina Filozofa, 2010), 447.
[17] I. Nekvapilová, kol. Úvod do vojenského leadershipu (Brno: Univerzita Obrany, 2018), 27.
[18] Conqua, 4 MILITARY STRATEGIES USED BY DECISION MAKERS TO MAKE THEIR TEAMS PRODUCTIVE, June 06, 2019, last accessed September 28, 2022, https://www.conqagroup.com/blog/military-strategies.
[19] I. Nekvapilová., kol. Úvod do vojenského leadershipu (Brno: Univerzita Obrany, 2018), 28.
[20] Ibid., 29.
[21] Ibid., 86.
[22] A. Aponowicz, Dowodzenie (Warszawa: MON, 1961), 72.
[23] Monika Lewińska, "The Role of Communication in Military Leadership" Research Gate March 09, 2016, last accessed October 14, 2022, https://www.researchgate.net/publication/297751623_The_Role_of_Communication_in_Military_Leadership.
[24] I. Nekvapilová, kol. Úvod do vojenského leadershipu (Brno: Univerzita Obrany, 2018), 87.
[25] Ibid., 88.
[26] Ibid., 89.
[27] Monika Lewińska, "The Role of Communication in Military Leadership," Research Gate, March 09, 2016, last accessed October 14, 2022, https://www.researchgate.net/publication/297751623_The_Role_of_Communication_in_Military_Leadership.

02

SECTORAL QUALIFICATIONS FRAMEWORK FOR THE MILITARY OFFICER PROFESSION: MODELS OF APPLICATION

MANTAS BILEIŠIS

- **Author:** Dr. Mantas Bileišis, General Jonas Žemaitis Military Academy of Lithuania, Vice-Rector for Studies and Research. Colonel Dr. Alin Bodescu, National Defence University "Carol I", Deputy Commandant The views contained in this article are the authors' alone.

- **Abstract:** In 2021, the implementation of the EU military officer sectoral qualifications framework (SQF-MILOF) was launched as a result of nine years of work (2009-2014 and 2018-2020). Freedom of movement has driven education policy to greater integration. As the globalised professional labour market has benefited from the standardisation of multiple professions, so could the military officer profession benefit from applying tools developed in the context of education and human resource management. Additionally, the tradition of socialising and educating military officers in parallel means that much of the training is rooted in national military tradition, service duties other than education, and a hierarchical approach to decision-making concerning curriculum development.

- **Problem statement:** How to understand the prospective SQF-MILOF implementation models?

- **Bottom-line-up-front:** MSQF-MILOF is more than a taxonomy of levels describing the complexity of learning for the military officer profession; it is a model that can provide a solid foundation for enhancing military officer training and education and human resource management, but it requires an institutionalised mechanism for that potential to be realised.

- **So what?** This paper describes three models for applying the SQF-MILOF, each more ambitious and directly engaging a greater number of stakeholders. At its most complex, it can be envisaged as a means of addressing staffing challenges and increasing deployed military personnel's performance at national and European levels.

What Now?

In the children's movie Finding Nemo, a group of fish is held in an aquarium in an office just across the street from an ocean embankment. The fish develop a plan to clog the aquarium's water filtration system, so they will be placed in plastic bags while the aquarium is cleaned. Once in the bags, they plan to jump out the window and over the embankment's edge. When the group finally reaches the ocean—an unforeseen problem arises—the fish are still in plastic bags. And one of the fish asks: now what?

The development of the Sectorial Qualifications Framework for the Military Officer Profession (SQF-MILOF) is a story that is no less impressive than that of the fish that made it across the barrier in Finding Nemo. Representatives of over 60 European military academies, members of the European Initiative for the Exchange of Military Young Officers (or EMILYO) framework, carried out the initial effort between 2009-2014. This sought to create a common vocabulary, which was necessary to enable the exchange of officers, cadets, and other students. This original document allowed various educational and training initiatives to be created and implemented. Additionally, the EMILYO network has led to the development of multiple international semesters for officer cadets and over 70 education modules delivered internationally. However, the mandate of this effort was limited to junior officer competencies. In 2016, the EU Military Committee requested the European Security and Defence College to develop a sectoral qualifications framework that would span the entirety of the military officer profession. Much of the work on this framework was conducted between 2018 to 2020, when a working group of EU member-state representatives developed SQF-MILOF in its current form, with the document kick-off event in September 2021.

Initially, the Implementation Group (IG) had a limited scope. It aimed to "develop a system of descriptors for learning outcomes of vocational training (the academic part of training will continue to be described according to the national qualification frameworks, compatible with the EQF). These descriptors will minimally be used for the modules that are offered for exchanges of cadets and officers".[1] The outcomes of that exercise (learning outcomes grouped by eight competence areas[2]) were considered to match Level-6 on the European Qualifications Framework (EQF). Reportedly, that was the appropriate level within the mandate of the IG (vocational competencies at the end of the initial education/training of a young officer).

To exploit this achievement, in 2014, the IG invited the EU military structures (EU Military Committee through EU Military Staff) to develop a "full SQF at levels 4 to 7 (or 8) for the military profession as an implementation of the EQF, based on the work done by the

IG". Although the EU Military Staff considered this invitation, the task was considered more relevant to the ESDC with its ad-hoc working groups organised around specific tasks. In 2017 the MS agreed to create a new expert position in the ESDC secretariat and decided to continue the development of a full-scale SQF-MILOF. The SQF-MILOF package was completed in 2020 by an ad-hoc working group.[3] Foreseeing its completion and subsequent value to military training and education, the Council of the EU mandated the ESDC to "further elaborate, maintain and promote the sectoral qualification framework for military officer".[4] It was the job of the SQF-MILEG (SQF-MILOF Executive Group), established in December 2021, to carry out this task[5] by mainly facilitating the efforts of the interested MS in implementing SQF-MILOF at the national level. Beyond its political dimension, SQF-MILOF is a tool against which MS could reference/link their military qualifications, which would help them to compare similar qualifications.

One may claim that this achievement opens an 'ocean' of possibilities, but there is a catch. The metaphorical plastic bag that stands between SQF-MILOF and the 'ocean' is the fact that SQF-MILOF is a document. At the same time, the realisation of the promises it can hold necessarily lies in the systemic action of various stakeholders in the defence community. In other words, the qualification framework must be institutionalised. At the base level, SQF-MILOF is already institutionalised by establishing a sectoral qualification framework for the Military Officer Profession Executive Group (SQF-MILEG) and implementing its decisions by ESDC within the mandate it has. SQF-MILOF has undergone several increments of development: EMILYO, the member state working group, and now the implementation group. This paper will describe possible increments of institutionalisation that relate SQF-MILOF with military officer recruitment and staffing; targeted and cost-effective competency development through training and education; officer career support throughout their service; and achieving these at both national and European levels.

Profession Or Not, And Why Is It Important?

The title of the SQF-MILOF includes the term "profession". However, certain issues arise in bodies of literature that try to define military service as a profession. Professions in the sociological literature are described as institutions having a particular and distinct relationship with the state, among other things.[6] And there are opinions that professions are no longer consequential institutions.[7] For Gorman and Sandefur, the distinction between knowledge-based work and other occupations lies in the need to gain specialised education. However, that does not imply any significant institutionalisation of certain groups around any specific concept of work.

A glance at the SQF-MILOF will immediately demonstrate that a military officer's skill-set will overlap with multiple other areas of expertise. So the SQF-MILOF core is not so much a core of competencies distinct from all other knowledge-based expertise but a constellation of competencies that can only be achieved by consistent and directed effort. Libel adopts a similar line of reasoning that security expertise is no longer a preserve of military officers.[8] Libel builds on Eyal and Pok,[9] whose framing aligns with Gorman & Sandefur. Focusing on expertise rather than on institutions allows the taking of a pragmatic attitude to a military officer corps's human resource management (HRM) because, analytically, it focuses not on large groups or even individuals but on specific competencies that individuals hold. This holds a promise for using HRM tools that would offer greater flexibility in recruitment, staffing, training, and education as the policy shifts and demands of the military change.

Here, an important nuance in the sociology of professions is the focus on selfless service to society.[10] Military officers do not directly serve discernible individual members of the public; rather, their loyalty is to the state. Therefore, framing military officers as a profession complicates the description of the military's mission: a vital element of a profession is self-organisation, which implies an interest in the profession that might not necessarily be in line with that of the political authority of the day. It should be noted that the seminal text on the military profession itself, "The Soldier and the State"[11], was criticised because it implied that the 'professional' officer needed to take a political position.[12] Huntington distinguishes the military profession from all others by using a term from Laswell & McDougal of 'managers of violence'.[13] However, Huntington's and Laswell & McDougal's perspectives on the officer differ.

In Huntington's analysis, the military profession arose from a split of political leader-soldier (as exemplified by Napoleon). However, this does not mean that the officer corps should be viewed as a separate state institution. A concept to consider here may be that of a political-administrative dichotomy. Other functions that are part and parcel of modern states, such as healthcare, education, social welfare services, infrastructure development, and maintenance, have mostly become part of the public sector relatively recently.[14] From this perspective, in the hope of the state maintaining policy cohesion, non-military public officials must share at least some of the values that a 'professional military would'. At the level of distinction between politicians and public servants, that politico-administrative dichotomy allows listing traits of public officials that a police officer, a military officer, and a civil servant might share. It enables considering ideas related to service and employment in the public sector from a Weberian point of view. The competence that a person may bring into the service is loyalty to the oath, while the promise in return that they may receive

from the state is a certain standard of welfare. As long as the oath-reward bond is strong, the administrative entirety of the state may be developed by adopting managerial tools as proven effective:

„The administrative staff, which externally represents the organisation of political domination, is, of course, like any other organisation, bound by obedience to the power holder and not alone by the concept of legitimacy, of which we have just spoken. There are two other means, both of which appeal to personal interests: material reward and social honour. The fiefs of vassals, the pretends of patrimonial officials, the salaries of modern civil servants, the honour of knights, the privileges of estates, and the honour of the civil servant comprise their respective wages. The fear of losing them is the final and decisive basis for solidarity between the executive staff and the power-holder."[15]

An administrative community, with a barrier of an oath, and security experts within it, in service of the state, could create an ethos of mutual trust among government agencies and the balancing of ethical principles of efficient policy delivery and respect for the democratic process.[16] From this point of view, the professional traits of the military officer corps, as described by Huntington of corporate consciousness, exclusive responsibility, and expertise, are neither descriptively correct nor helpful for achieving complex policy goals of which the military dimension might just be one.

Limits to SQF-MILOF Utility

SQF-MILOF could become the foundation for standardised military officer training, education, and human resource management to the extent that it is needed. The HRM perspective allows interpreting the application of SQF-MILOF as a cycle of recruitment, training, education, placement, and motivation to better perform militaries in the tasks that are set before them. Recruitment has been a major challenge in NATO countries for some time.[17] Population ageing, lower working condition flexibility, and more restrictive compensation practices mean that public service, military included, is less competitive in attracting talent.[18] Western militaries vary in size dramatically, and smaller states often deploy their officers for training internationally to gain skills or rely on the civilian sector. HRM is a broad field; indeed, recruitment and training (or professional development) are often considered integral to this organisational process.[19] What SQF-MILOF offers advanced military organisations is competency mapping and modelling. Military organisations, like any other, can endeavour to map the competencies of their staff and develop their competency models using the SQF-MILOF as a reference. Such data can serve policy decision-makers, recruiters, and

educators in quickly identifying gaps in required competencies, deploying officers where their competencies are needed most, and providing targeted support for officers in their professional development.

The potential benefits of SQF-MILOF must be communicated, and political decision-makers must be convinced of the utility of dedicating resources to building an international standardisation process around SQF-MILOF. Standardisation also implies costs through external evaluation and service providers' adoption of administrative compliance mechanisms.

Additionally, for modelling, three distinct aspects of SQF-MILOF need to be kept in mind. Firstly, SQF-MILOF is international in nature and hierarchical. Ideas about its implementation are validated by SQF-MILEG, which comprises representatives from member states. Despite having the possibility to receive input from all sources, there is no systematic relationship between SQF-MILEG and the military officer corps if we describe them as corporations. This is significantly different from the above-described sociological notions of how professions function. This means that SQF-MILOF communication is fragmented.

Secondly, qualification frameworks serve a public governance purpose. Qualification frameworks attempt to better communicate qualifications to employers and involve employers in setting educational goals.[20] Qualification frameworks that describe learning outcomes can allow the creation of a responsive education delivery system.[21] In this respect, the military has an advantage vis-à-vis the civilian sector, including the civil service. Education service providers often work and compete on a market basis to provide a service, and industries compete for talented graduates. So, any education service provider usually cannot engage the sector to gauge the competency demands and vice versa. So qualification frameworks are efforts to define the relevant requirements for industry experts that education providers may need—it is a sort of proxy. For the military, both education provision and service are—at least at the national level—monopolies.

Furthermore, it is not uncommon for the same officers to rotate as an educator and ‚employer'. Even in the cases of international training deployments, they are usually strictly regulated at the national level. SQF-MILOF, therefore, is not as much of a tool for national discussions on officer training and human resource policies as it is an international vocabulary that reflects the current understanding of what competencies military officers should possess.

Thirdly, qualification frameworks can be adapted to developing competency models.[22] These models can be implemented at any organisational level, including international ones. In such a model, all officers could report on their competencies from the point of view of the SQF-MILOF, and all military service positions could be described in SQF-MILOF terms. An integrated database would allow for better identification of existing talent that could be placed in most needed parts and identify competency gaps that are lacking from the point of view of placement demands. A geographic aspect can also be integrated into this model. These could even be geographically located and addressed using education interventions as projects or where the gap is sustained through international collaborations to achieve the necessary number of participants in close geographical proximity.

Prospective Increments Of SQF-MILOF Institutionalisation

This overview allows us to imagine several models of employing SQF-MILOF. Our list is not exhaustive but represents a possible spectrum of institutionalisation of varied scopes and political commitment. The above analysis allows putting forward three models: opportunistic, voluntary certification, and strategic HRM.

The opportunistic model is our baseline model that already exists. SQF-MILOF already provides military education service providers opportunities to create training and education content when needs and interests match. The setup of SQF-MILOF configuration also enables the design of voluntary registration and search means. A platform to support this effort was begun to develop by ESDC in 2022. The voluntary certification model can enhance existing training and education opportunities through an external quality assurance mechanism, broad data collection, and analysis of available services, promote stakeholder engagement, and support education and training institutions in curriculum development that would reflect best practices. This model implies the development of a separate institutional mechanism that needs to be arranged in a way that augments, not conflicts with existing national training and education systems and national and international accreditation mechanisms.

Finally, the most elaborate application of SQF-MILOF is a strategic human resource management model.[23] This may allow the profiling of officers (and others) against the SQF-MILOF to create new professional development, career planning, rotation and deployment mechanisms for militaries and source expertise by means other than full-time service. This model goes beyond military training and education and requires consistent political support. Again, as with the voluntary certification model, many states have

existing national systems at varying levels of sophistication. SQF-MILOF integration may affect them in different ways and to different extents. A lot of academic and analytic groundwork must be done before a possible implementation mechanism can be.

	Opportunistic	Voluntary Certification (Accreditation)	Strategic Human Resource Management
Scope and Political Commitment	Coordination between service providers sufficient	Need to facilitate standardization at a supranational level	Integration of SQF-MILOF into HRM processes in the militaries
Output	Multi-institutional/ multi-national training and education curricula	Effective, stakeholder-involving, transparent, international best-practice sharing for continuous improvement of officer training and education as dictated by changing requirements	An integrated national (NATO/EU-level) officer training, education, and career support mechanism
SQF-MILOF Application	SQF-MILOF serves as a vocabulary for common curriculum development or training recognition	SQF-MILOF as a voluntary compliance standard, augmented with a compliance assurance mechanism	SQF-MILOF forms the basis of ontology for the various technological tools needed for effective HRM
Mechanism of Implementation	Horizontal: peer-to-peer	Bottom-up: "coalition of the willing"	Top-down: strategic goals driven

Table 1: Prospective Models for the Application Of SQF-MILOF; Source: developed by authors.

Conclusions

The mandate of EMILYO stresses that its goal is to work toward harmonising education, but it does not necessarily imply integration. Managerial and/or quality assurance standardisation are potential venues to enhance existing efforts on this path by building on SQF-MILOF, which currently represents the state-of-the-art harmonisation of officer training and education. However, standards are not only documents but institutionalised ecosystems of continuous development and compliance assurance supported by relevant data collection, analysis, and exchange. SQF-MILOF was nine years in the making and has resulted in many international cooperation efforts to develop officer training and education. Still, the character of those efforts remains fragmented and varied across states and institutions.

If harmonisation is a goal, a more systematic approach at the EU/NATO level would be helpful. We imagined two models as prospective increments to this end. Further institutionalisation of SQF-MILOF can help develop adaptive and cost-effective training and education across EU/NATO militaries. It can also contribute to better staffing, career planning, support, and economically rational human resource management decision-making at both the national and, ultimately, EU/NATO levels. Staffing and retaining military officers is challenging for most EU/NATO member states. So a strategic, priority, and data-driven approach to this challenge strikes us as an opportunity not to be missed.

Our analysis also suggests that using the term profession within the context of military service needs to be very careful. The key benefit of SQF-MILOF is that it allows the focus to be changed from a group (professional or otherwise) to the competencies of a single person. Each competency can be analysed and related to the service requirements of a particular position. At this level of analysis, certain traits of a military officer can be found among many citizens, thus creating new recruitment opportunities and nonlinear career options for military officers within the public sector as the security environment shifts and changes. In this line of reasoning, SQF-MILOF is a basis for a competency model in that anyone possessing the relevant could be measured against SQF-MILOF and thus open recruitment opportunities. Regular officers should have formal and systematic training and education-based SQF-MILOF. Still, in situations where there is a need for temporary contributions, or a rapid scaling of the force, a system of assessing persons against SQF-MILOF can be beneficial.

Endnotes

[1] Comparison of courses based on competences (LoD 2), ESDC internal document, IG/2014/002 (Rev 4), 24/09/ 2014.
[2] The given competence areas were: military serviceman; military technician; leader and decision maker; combat-ready role model; communicator; learner and a teacher/coach; critical thinker and researcher; international security/diplomacy actor.
[3] European External Action Service, Sectoral qualifications framework for the military officer profession: SQF-MILOF, Volume 1, Publications Office, 2021, https://data.europa.eu/doi/10.2871/37724.
[4] Council Decision (CFSP) 2020/1515 of 19 October 2020 establishing a European Security and Defence College, and repealing Decision (CFSP) 2016/2382.
[5] https://esdc.europa.eu/sqf-milof/.
[6] T. L. Adams, Sociology of professions: International divergences and research directions, Work, employment and society, 2015, 29(1), 154-165.
[7] E. H. Gorman, R. L. Sandefur, "Golden age," Quiescence, and revival: how the sociology of professions became the study of knowledge-based work, Work and Occupations, 2011, 38(3), 275-302.
[8] T. Libel, The Rise and Fall of the Study of the Military Profession: From the Sociology of the Military

Profession to the Sociology of Security Expertise, In: Rethinking Military Professionalism for the Changing Armed Forces, 13-28.
[9] G. Eyal, G. Pok, What is security expertise? From the sociology of professions to the analysis of networks of expertise, In: Security Expertise, 53-75.
[10] C. J. Downes, To be or not to be a profession: The military case, Defense Analysis, 1985, 1(3), 147-171.
[11] Samual P. Huntington, The soldier and the state: The theory and politics of civil–military relations (Harvard University Press, 1957).
[12] T. Taylor, Book review. Huntington: The Soldier and the State, The Yale Law Journal, 67, 164-169.
[13] H. D. Lasswell, M. S. McDougal, Legal education and public policy: Professional training in the public interest, Yale Legal Journal 52, 1942, 203.
[14] B. G. Peters, The politics of bureaucracy: An introduction to comparative public administration (Routledge, 2018).
[15] H. H. Gerth, C. Wright Mills, (Translated and edited) From Max Weber: Essays in Sociology (New York: Oxford University Press, 1946).
[16] K. Yang, M. Holzer, Re-approaching the politics/administration dichotomy and its impact on administrative ethics, Public Integrity (2005), 7(2), 110-127.
[17] T. S. Tresch, Challenges in the recruitment of professional soldiers in Europe, Strategic Impact, 2008 (28), 76-86.
[18] C. Leuprecht, The Demographics of Force Generation: Recruitment, Attrition and Retention of Citizen Soldiers, In: Canadian Defence Policy in Theory and Practice (Palgrave Macmillan: Cham, 2020), 179-200.
[19] D. R. Tomal, C. A. Schilling, Human Resource Management: Optimizing Organizational Performance (Rowman & Littlefield, 2018).
[20] S. Allais, The implementation and impact of National Qualifications Frameworks: Report of a study in 16 countries (Geneva: ILO, 2010).
[21] O. B. Ure, Learning outcomes between learner centredness and institutionalisation of qualification frameworks, Policy Futures in Education, 17(2), 172-188.
[22] S. Sanghi, The handbook of competency mapping: Understanding, designing and implementing competency models in organizations, SAGE Publications India Pvt, Ltd. (2019).
[23] B. S. Noveck, Smart citizens, smarter state: The technologies of expertise and the future of governing (Harvard University Press, 2015).

03

INTEGRATING ARTIFICIAL INTELLIGENCE, NEW DISRUPTIVE TECHNOLOGIES, AND THE METAVERSE TO ENHANCE NAVAL LEADERSHIP

ANTONIO BUFIS

- **Author:** Lieutenant Commander (Navy) Antonio Bufis is a researcher in Artificial Intelligence and Machine Learning and an analyst in Naval and Maritime Sciences and Geopolitics. Bufis has had his articles published in Italian technical journals. The views contained in this article are the author's alone and do not represent the views of the Italian Navy.

- **Abstract:** This paper analyzes the implications of using artificial intelligence and the Metaverse in the military field to investigate how leadership can intervene and operate effectively. In this regard, the role of machine learning or artificial intelligence must be less significant than that of human oversight to avoid ethical dilemmas. To this end, this paper analyses whether good leadership intervenes in both algorithmic creation and retrospection. This competition plays out in the linked and interdependent political, military, economic, social, information, and infrastructure (PMESII) domains. Specifically, in the military field, the competition occurs in six classic domains: Maritime, Land, Air, Space, Cyber, and Electromagnetic, which are increasingly interconnected. The competition is increasingly intense since the military is used as a test for all the available technologies. Artificial intelligence is becoming more widespread owing to the construction of algorithms that constantly expand the potential of machine learning. As for new technologies, the Metaverse assumes an important field. It is increasingly interconnecting our online and offline lives such that the implications of such technology are uncertain. Moreover, new wars have become increasingly hybrid and multidomain-oriented. This is due to several elements, ranging from the communication systems, including social networks, which influence individuals, to the Command & Control systems, being part of Command, Control, Communication, Computer, Cyber & Combat System, Intelligence Surveillance Targeting Acquisition and Reconnaissance (C6ISTAR), which are also used for the targeting process.

- **Problem statement:** How must the new generation incorporate technological changes to improve leadership capabilities in various contexts?

- **Bottom-line-up-front:** In the current era, the main way for any country to maintain its dominance is to enhance technological superiority and employment. In particular, AI, new disruptive technologies, and the Metaverse could affect the military domain positively and efficiently. These technologies could help military leaders, especially naval leaders, better assess the choices and decisions for overcoming new challenges.

- **So what?** The various armed forces must educate young officers and embrace the changes brought about by new technologies in the military field. Military academies must develop an appropriate path to increase the technical and classic skills (e.g., managing changes, solving problems, and developing human interaction skills) to create efficient and balanced leadership in the new operational environment.

The Return to the Great Power Competition

The competition between the democratic states, led by the United States and its allies, and the revisionist powers, China, followed by the Russian Federation and the Islamic Republic of Iran, characterizes the new era. Until the last decade, countries worldwide seemed to be proceeding towards a union of intentions. However, the so-called „great power competition" has intensified. For this article, the battleground of this competition concerns all areas of Political, Military, Economic, Social, Infrastructure, Information (PMESII), which includes infrastructure. Additionally, when examining all these areas, we must consider technological development, that is Research & Technology (PMESIIIR & T).[1] Technological development is fundamental to maintaining dominance in the world order; US President Biden reiterated the same concept in the first days of August 2022.[2] The technology sector deserves particular attention; research development, for example, semiconductors, is essential to allow supremacy in related production and use. Semiconductors are used in many fields, from automobile construction to the development of quantum computers. Today, in terms of quantity and quality, the production of semiconductors largely occurs in the Indo-Pacific.[3] The containment policy carried out by Western countries towards China passes from the physical sphere, which goes from the control of the seas to technological research and development to space and the cyber sphere.[4]

Future Leadership Skills

Given the impact of sweeping technological changes in international relations, the military, and other domains, what skills should future leaders have? There are different branches of thought: the first prefers classical skills, while the other prefers science, technology, engineering, and mathematics (STEM) education.[5] A good leader must have classical and technical skills in the current era. It may be necessary to divide the different types of leaders according to the level at which they operate. A functional subdivision is political, strategic, and sector (i.e., technical, personnel, logistic, operational).

A minimum level of technical skill is necessary to ensure the right mental elasticity to manage the challenges of this millennium. In addition, the classical skills include managing changes, solving problems and making decisions, demonstrating ethics and integrity, displaying drive and purpose, exhibiting leadership stature, increasing the capacity to learn, self-management, increasing self-awareness, developing adaptability, and communicating effectively.

All domains are connected and interdependent with specific reference to the military field: Maritime, Land, Air, Space, Cyber & Electromagnetic.[6] We must add transversal

elements that interact actively with all these elements, like social media. Technology is a transversal factor that impacts everyone; thus, it is necessary to maintain an advantage over the development of artificial intelligence to have supremacy over others.

How can leadership intervene effectively, and, above all, at what stage should it operate concerning the implications of artificial intelligence and Metaverse in the military field? In this regard, the role of machine learning or artificial intelligence must not be more significant than that of human leadership. In this new era, does good leadership only intervene in algorithmic creation, or does it also act in retrospect?

Impact of AI on Leadership

Technology has always represented an enabling and essential factor in acquiring supremacy over others. The current era is characterized by a hyper-connection that will continue to increase and increasingly bind the different sectors of society and people themselves. This involves an increase in data availability. Nevertheless, such data must be collected, recorded, and analyzed as quickly as possible to guarantee effective analysis and protection.[7]

AI is set up to support these analyses by learning from the external environment to take or help take decisions independently. This last aspect is of great importance because deciding the types of decisions that can be taken independently is necessary. AI certainly leads to numerous advantages[8] based on the type of sector it is implemented in: medical, economic/commercial, social, energy, military, environment, simulation and improvement, and research and development.[9]

The military applies AI in various domains, but the maritime domain includes and cooperates with all the others. There are various examples of AI applications in the maritime environment, which can be summarised in four main areas: Combat Networks, Logistics, Anti-Submarine Warfare, and Mines and Countermines measures. The new combat networks are leading to a „Computer Vision" philosophy, which is made by machine-human collaboration for integrating processors, software, and displays with software applications and algorithms to support command processes and decision-making.[10]

The logistics field is now supported by visual reality: virtual reality, computer vision, and digital twins offload burdensome maintenance tasks that distract soldiers from decision-making. Anti Surface Warfare (ASW) domain is now capable of multi-static operations: exploiting target returns from multiple autonomous sources or receivers (UXVs) to produce target tracks. This is supported by the recent events in the Baltic sea, where Nord Streams

1 and 2 were attacked. These attacks were probably conducted by Unmanned Underwater Vehicles (UUV). In the future, AI could increase the effectiveness of UUV deployment, mostly against infrastructure and info-structures. With these technologies in multi-domain operations & hybrid warfare, the military and political leadership could act effectively and covertly to reach the military and strategic objectives. Lastly, the Mine-Counter Measure activities are supported by synthetic aperture sonars: high-rate scan sweeps by autonomous vehicles provide high-resolution images and reduce risk as host ships stay outside minefield boundaries.

In general, the main focus is now on Command, Control, and Combat systems: the application of AI to new systems requires new kinds of cyber protection for the networks[11] to prevent the enemy from penetrating the system and using it to disrupt ongoing operations and assets. President Obama's staff studied this dilemma.[12] Furthermore, the Command and Control systems have to deal with multi-domain operations; to guarantee safety and secrecy, there are new studies on the Cyber Protection of increasingly autonomous systems and multitasking.[13] These systems have to deal with the coordination between the ship systems and those used on the new concept of „remote embarked vehicles". Unmanned Armed Systems and Vehicles used by the new ships can act in the air (UAS), on the surface of the sea (USS), and underwater (UUV). All of them are controlled by men and supported by the application of AI.

The Combat System is now almost autonomous. Using the logical AI decision and discrimination processes, it can define a target, acquire it, and propose the best shooting solutions to the operators. For example, the new systems can analyze various missile tracks to intercept and provide fire solutions to counterattack. This specific application leads to the „Paradox of Choice" resolution. One of the main problems in the decision-making process is having too many options without a clear view. The application of AI to various systems, especially the targeting ones, offers a fast calculation of the success rate. This helps in giving an output of just a couple of possible choices, leaving the final decision to the officers and filtering out suboptimal options to save time.[14]

The new micro-satellites could use AI to move from one place to another, following the troops on the battlefield or ships in some areas, such as the Arctic Ocean, where continuous satellite coverage is lowest. Moreover, the AI inside the micro satellites could enhance the defense system against attacks from other satellites or the ground and be integrated into the warfare net with warship/aircraft/C&C centers improving accuracy in detecting and tracking targets.

In particular, we live in an era in which climate change is an exponentially disabling factor that will impact the development of countries. Preserving the environment is one of the tasks that all Western governments and emerging powers are taking upon themselves, signifying how essential it is for survival. Accordingly, technology, especially AI, could be used to forecast and optimize population alert systems. Relevant technologies could be exploited for the studies aimed at restoring polluted territories with dedicated programs and implementing corrective actions to counter the overheating of some regions globally.[15] All this could be possible with monitoring and mapping networks. In this context, leadership would play an essential role as individuals have to decide which of the proposed solutions is suitable for a given place inhabited by certain societies.

Another sensitive aspect of AI implementation is in the simulation and improvement to perfectly integrate multiple sectors, such as medical, economic/commercial, social, energy, military, environment, simulation & improvement, research and development. The simulation would allow one to imagine what could happen with some certainty and, consequently, help one to work towards improvement. Everyone, from individual sector technicians to those tasked with deciding which data to enter to obtain certain simulations, would operate with a high degree of autonomy.

This is directly linked to research and development, a sector that overlaps all other domains, wherein AI could help achieve a clear superiority over various competitors. Being transversal, the implementation of AI is all-encompassing. In this context, those who give directives, those who follow the indications, and those who work on projects maintain positive, recognized, and effective leadership towards all the components of the various working teams.

Another aspect is using AI to find fake news published on social networks.[16] In this era, wherein war occurs in both the physical and virtual realms, commanders could use AI to identify fake news and establish a strategy to counter it. In this way, the leadership could increase the number of followers and mobilize resources. Further, the leader could influence public opinion and change the nature of the mission.

In light of what has been said so far, there are at least two critical aspects to consider when deploying such technologies: the type of code that must be used, which should be ethical, and a solid legal framework that must also be used to set rules that are generally recognized by all and designed to clearly define legality in reference to ethical human conduct.

Ethical Dilemma

In any decision-making situation, ethical issues are either implicitly or explicitly involved. The choices leaders make and how they respond in a given circumstance are informed and directed by ethics. Military leaders must constantly deal with ethics because of their roles and position.[17]

New technologies and AI require this process to be applied in the decision-making processes made by these new instruments. To do so, two main phases are required: firstly, the algorithms used for programming have to be created based on the ethic of the creator so that the direction taken in the process is ethical. In other words, they must be following human rights and humanitarian principles. Secondly, human beings need access to a control phase to evaluate outputs and avoid severe errors in interpreting data. The facts give a clear example of the importance of the surveillance phase that occurred in Russia in 1983 when Stanisláv Evgráfovič Petróv was assigned to an organization superintending the new early warning system that had to reveal ballistic missiles launched from NATO's members. On September 26, 1983, Petróv identified a false alarm given by the system and decided not to activate the response system, probably avoiding a nuclear conflict.[18]

Another ethical dilemma point of view is related to data management security. One has to be aware of the importance of avoiding sharing, spreading, or selling secret information to others, nations, or organizations.

Impacts of New Technology Onboard Modern Warships and Naval Leadership

The naval leadership learning process is a key topic in new officers' education that begins in naval academies and develops throughout officers' careers. It is crucial that all young officers clearly comprehend that leadership is strictly linked with the profession, as it is a constant responsibility that requires efficiency. Becoming a great leader today is increasingly complex because the individual must choose between all the available information and „see through the fog" of daily tasks to focus on the goals that must be achieved constantly.[19]

The role of the commander is unique to other civilian leadership positions. For example, at sea, the commander is alone with his crew, where the safety of the naval unit and success in the battle and the assigned mission depends on her/him. The crew looks at each commander with critical eyes but must trust the commander because key decisions that will lead to victory or defeat depend wholly on the commander.[20]

The Naval Unit, technologically advanced and capable of projecting power and defending the interests of an entire country, is at the commander's disposal at sea. Naval Units are versatile vehicles able to change missions quickly and switch from peacetime operations to combat mode almost instantaneously; therefore, the conduct of the tactical maneuvers is up to experienced people with a high level of naval leadership. AI could support a commander's decision-making process at sea without affecting the commander's authority and authoritativeness, as the final decision will depend on the commander.[21] The current Command and Control systems are technologically advanced and have a good degree of automation, but the intention is to implement them with AI.[22] The recent technological era is data-heavy. The difficulty is not related to collecting this data but rather to analyzing and exploiting it quickly.

The current systems can assign a classification (SURF-SUB-AIR) and identity (FRIEND or FOE) to a contact but function in strictly mathematical terms. Thus, human intervention is always necessary. However, AI could facilitate the decision-making process[23] even further, particularly in the context of air warfare, where discovery, tracking, target classification, identification, and engagement occur very quickly, especially with regard to missiles.

The officer who must manage certain situations, and the commander, would not lose credibility and would unambiguously exercise leadership in tandem with AI support. AI could enhance the cyber protection of both the Command and Control Systems and the communication networks that exploit the satellite carrier, considering that there is a high level of integration between naval and air assets and with land commands.

Cyber protection would materialize not only on the outside but also in all internal networks, ranging from the Command and Control System to the platform and security system. Technological digitization has brought many advantages, but numerous vulnerabilities and criticalities are inherent. Therefore, cyber protection represents a pillar to being able to not only fight but also navigate safely. The implementation of technology and, therefore, the detail of AI would facilitate the centralization of decisions to be taken on the single consoles in the dashboard and Combat Information Center (CIC) and the tactical and strategic management of events.

The commander could maintain a certain degree of positive leadership towards the crew, guaranteeing each crew member some degree of empowerment and freedom, thus leaving them the appropriate autonomy to act. This freedom is crucial to give a sense of responsibility to those who usually don't have to make a big decision. This technique prevents operators from blindly trusting their machines and systems. In other words, the working process could not only count on AI, but human control remains the process's focal point.

AI could support and advise the members of the CIC team in the correct setting of the radar and sonar systems based on environmental characteristics. In contrast, the weapon systems' predisposition would remain the commander's prerogative. In a not-too-distant future, with the almost instantaneous analysis, enhancement, and management of data, the reaction of the naval unit and counter-reaction of the enemy could be quickly simulated to make the most effective decision at that juncture. In these hypothetical simulations and situations, the crew members make the difference because they direct the system to operate in a certain way. Therefore, the whole crew must work with a suitable delegation regime.

The balance needed is fundamental: clarity of purpose, exemplary leadership, loyalty, charisma, organization, and management are pillars of being a good commander that is beyond AI and technology. If the crew fails, the commander is left alone to fight with a vehicle that is essentially unmanned or ‚soulless', and the chances of failure increase. Charisma is not the sole requirement for leading a crew: crews govern themselves in other ways, developing skills, including transversal ones, and managing people-to-people relationships wisely, making long-term experience fundamental.

The Role of Metaverse in the Military Field and Naval Leadership

The Metaverse is immediately connected to civilian entities: social,[24] medical, and infrastructural, among others. However, the Metaverse can also apply to the military, wherein there is great potential and capacity for implementation. There is a particularly large margin for growth: training, maintenance (for naval units both in port and at sea), and operations on the battlefield.[25]

In the Metaverse, the commanders, crews of ships, regiments, and pilots of fighter planes and helicopters can be trained. The military Metaverse must be imagined as a platform where there are a series of interconnected systems, wherein several training assets[26] (e.g., simulation of entire CIC-Bridges-Platform Operational Centers, Weapon Systems in use, guns and missiles systems, aircraft cockpits and helicopters) are concurrently operating in a virtual reality world. Each operator could wear glasses capable of displaying all the devices that must be set up for use via virtual reality. In this way, the operators are trained to carry out their duties in full fidelity to their systems, and the commanders are trained in leadership.[27]

Accordingly, a commander can demonstrate to his men how he would behave on the battlefield and admit to errors made to grow together and avoid repeating similar mistakes. Therefore, by projecting these ideas on a large group of ships, for example, for the assets of

the NATO Allies and the European Union, complex training would be guaranteed even if the assets were not dislocated. It is clear that training with various assets, such as large ships, could be carried out in the Metaverse at a lower cost than in the real world. Team building between "remote crews" would be enhanced, and in this way, people-to-people interactions would be enhanced in ways that could not occur under normal conditions.

Furthermore, another significant factor is related to the experimentation of tactics. In this context, leadership grows with the experiments' success. The commanders and officers demonstrate their potential on the field and set themselves up as leaders capable of achieving victory and success in the mission. In this way, the crew develops stronger relations with these figures and is ready to follow them on the battlefield. Leadership skills and experience assume almost the same importance as charisma, which was fundamental in historical battles. The crews must believe that their commanders and officers have the necessary skills to face the new challenges.[28]

This approach can be easily replicated for what concerns the technical part. In the navy, preventative and corrective maintenance is particularly critical because the slightest system fault could affect the employment of a critical weapons system. Some maintenance requires intervention by the manufacturing industry relevant to the system/apparatus. This Metaverse activity can be conducted without limiting contemporary activities, whether in port or at sea. The operators could follow the instructions the maintenance technicians gave and instantly make corrections, even through a digital twin. Naval units would need less invasive interventions in port and could continue operating at sea without suspending a mission. The leadership of the commander at sea would not lose effectiveness.

Even with ships in operation, the Metaverse would make sense. For example, the commander and the key personnel on guard engaged in tactical action can interact with the superordinate commands, other naval units, and other commanders at sea through the Metaverse and the normal channels. Training in the Metaverse would enhance the ability to perform similar actions in the real world. Leaders need to be stronger and more authoritative, especially when they come up with a solution that may differ from the one suggested by the onboard systems. This disagreement may destabilise the crew, losing trust towards the commander. Many errors have been made relying on the onboard simplified systems, resulting in a non-charismatic leadership: a clear example is the collision at sea caused by a non-proper watch-out duty and based only on radars and anti-collision systems. Guiding personnel in fast-changing and interconnected conditions is much more difficult. Still, at the same time, technology allows for rapid improvement, from technical to transversal, and finally, helps orient crew members to achieve the final goal.

Therefore, the Metaverse has many applications and implications in the military domain. To guarantee the desired results concerning the leadership of the commanders and officers, it cannot be ignored. As stated previously, with the help of the Metaverse, leadership characteristics would be improved and amplified; depending on the areas in which you operate, skills can grow very quickly, as officers will have a better experience through training in virtual scenarios are very similar to real ones.[29]

In a hyper-connected world, where wars are multi-domain and inter-agency, the use of the Metaverse becomes essential to keep the technological gap high with other powers that want to assert themselves and acquire more power and prestige than in the Western world.

Conclusion

The international race for global supremacy is subject to the maintenance of technological advancement vis-à-vis competitors. To achieve supremacy, it is necessary to have an availability of rare earth materials, development of semiconductors, microchips, as well as infrastructure related to submarine cables and satellites for data exchange (especially in parts of the world where submarine cables are not currently developed such as the Arctic and Antarctica). This is reflected in the competition between the Western world and the revisionist powers of China, the Russian Federation, and the Islamic Republic of Iran. Ruthless competition is reflected in all the domains of the PMESIIIR & T, which comprises the classic domains of the military world: Sea, Earth, Air, Cyber, Space, and the Electromagnetic Spectrum. Therefore, a leader must possess skills that are of a classical/managerial nature, along with a solid basis in technical nature. Without the latter, it is difficult to understand specific projects' difficulties and development potential. To give directives, it is essential to know what to ask for.

The skills remain unchanged in the military. Specifically, a good commander in naval leadership must possess suitable technical skills to direct subordinates in the mission. This does not mean micro-managing; rather, the commander must show everyone what is required of them clearly and unambiguously. Furthermore, a good commander leads the crew by example and ethical behavior while immersed in advanced technology. The ethical dimension allows focusing on avoiding the „dark side" of leadership,[30] toxic and disruptive leadership. This situation is generally real when the leader takes personal advantage of her/his skills. Specifically, it is essential to consider ethical concerns to avoid compromising values, such as humanity and decision-making freedom. To this end, the base of the programming code for the AI application must be based on foundational/basic values and core principles.

In the technological field, the implementation of real ethical leadership that is informed by the writing of the codes and the effective use of means and systems is of particular importance. In aid of this ethical framework, there must be a legal framework that dictates the limits and boundaries within which it is necessary to function. Nonetheless, even in this context of such highly developed technology characterized by AI and Metaverse, it is appropriate for humans to remain at the center of the decision-making. This is because AI does not have the capabilities for forecasting analyses when the parameters to be considered are not clear data. In contrast, human beings can think ahead while accounting for those uncertainties, completing the decision-making process more accurately.

Often, the commander at sea and his staff are faced with choices that are not immediate and easy to choose. In this context, the AI could intervene, supporting and directing the leader towards the best choices, overcoming the so-called „paradox of choice", and, thus, reducing the „choice overload". Choice overload is a characteristic of the new era, which arises precisely from the multitude of data available, making quick analysis difficult. For the commander at sea, who is constantly developing naval leadership skills, the AI applied to the Command, Control, Communications, Computers, Cyber-Defense and Combative Systems, and Intelligence Surveillance Target Acquisition and Reconnaissance (C6ISTAR) brings concrete benefits and has a positive psychological impact, improving personal happiness, self-determination, creativity, resilience, emotional intelligence, and mindfulness.

Furthermore, AI could be used to identify fake news circulating on social networks, especially in an era of hybrid wars that affect all domains. This way, the leader could influence and mobilize resources and people towards common goals, discrediting competitors. The leadership of politicians and military leaders would benefit from this and be strengthened while creating an imbalance on the opponents' side.

The Metaverse represents a platform capable of increasing the skills and abilities of leaders and employees. This platform, in the military field, would represent a terrain in which personnel can learn, train, and carry out maintenance of the equipment used with the help of the technical personnel from the relevant industry, as well as carry out military operations in close coordination with all the other commands and military assets. Employing the Metaverse does not mean alienating oneself from reality, but rather the opposite. It means increasing the capacity to use military vehicles and operating with remote support, even overseas.

All these aspects are feasible, but the increase in data dissemination should be im-

proved to ensure adequate performance. While on land, especially in the civilian field, this problem is not widespread. However, at sea or in remote areas (such as the Arctic and Antarctic), the problem still exists.

To sum up, the various armed forces must change how to educate young officers and embrace the changes imposed by the new technologies in the military field. Military academies must develop an appropriate path to increase the technical and classic skills (such as managing changes, solving problems, and developing human interaction skills) to be prepared to develop efficient and balanced leadership in the new operational environment. Technical skills' improvement is necessary because a leader cannot act without appropriate technical skills and knowledge to lead the crew and personnel in this new era.

Endnotes

[1] For the info-structures, i.e., submarine cables, are fundamental to increase protection with surveillance and other means.
[2] Fact sheet: CHIPS and Science Act will lower costs, create jobs, strengthen supply chains and counter China (August 09, 2022).
[3] Taiwan runs 90% of the semiconductor market.
[4] https://www.truenumbers.it/semiconduttori-ue/; https://worldpopulationreview.com/country-rankings/semiconductor-manufacturing-by-country.
[5] The White House, US National Security Strategy, October 2022; Anusuya Datta, "What is Military Metaverse and How is it Different from Commercial Metaverse," July 29, 2022, https://www.geospatialworld.net/prime/what-is-military-metaverse-and-how-is-it-different-from-commercial-metaverse/.
[6] The Japanese military doctrine considers the EM field as a domain.
[7] https://conversational-leadership.net/world-is-hyperconnected/.
[8] White House, Statements And Releases, 2022, Fact Sheet: Chips and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China, August 09, 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/; Gastón Sanglier Contreras, Aurora Hernández González, Ma Inés Serrano Fernández, Carmen B. Martínez Cepa & Juan Carlos Zuil Escobar, "The Importance of the Application of the Metaverse in Education," July 15, 2022, https://www.researchgate.net/publication/362040311_The_Importance_of_the_Application_of_the_Metaverse_in_Education.
[9] Prince Chacko Johnson, Christofer Laurell, Mart Ots, Christian Sandstrom, "Digital innovation and the effects of artificial intelligence on firms' research and development – Automation or augmentation, exploration or exploitation?," March 20, 2021, https://www.sciencedirect.com/science/article/abs/pii/S0959652621000548#preview-section-snippets.
[10] Archana Yadav, "Role of Artificial Intelligence in leadership," February 2020, https://www.researchgate.net/publication/350663835_Role_of_Artificial_Intelligence_in_leadership.
[11] Prince Chacko Johnson, Christofer Laurell, Mart Ots, Christian Sandstrom, "Digital innovation and the effects of artificial intelligence on firms' research and development – Automation or augmentation, exploration or exploitation?," March 20, 2021, https://www.sciencedirect.com/science/article/abs/pii/S0959652621000548#preview-section-snippets.
[12] The White House, https://obamawhitehouse.archives.gov/files/documents/cyber/ISA%20-%20A%20National%20Model%20for%20Cyber%20Protection%20Through%20Disrupting%20Attacker%20Command%20and%20Control%20Channels.pdf.
[13] Lt Gen Anil Kapoor, AVSM, VSM (Retd), "Joint C6ISR and exploitation of space domain – a roadmap to address the capability gaps," August 2021, https://www.trentonsystems.com/blog/c2-c4isr-c5isr-c6isr-differences.

[14] Archana Yadav, "Role of Artificial Intelligence in leadership," February 2020, https://www.researchgate.net/publication/350663835_Role_of_Artificial_Intelligence_in_leadership.
[15] The White House, US National Security Strategy, October 2022, Prince Chacko Johnson, Christofer Laurell, Mart Ots, Christian Sandstrom, "Digital innovation and the effects of artificial intelligence on firms' research and development – Automation or augmentation, exploration or exploitation?," March 20, 2021, https://www.sciencedirect.com/science/article/abs/pii/S0959652621000548#preview-section-snippets.
[16] Idem.
[17] Peter G. Northouse, Leadership Theory & Practice, 8th Edition, 335-345.
[18] https://montrealethics.ai/ai-ethics-during-warfare-an-evolving-paradox/.
[19] CDR Lesa A. Mc Comas and CDR J.D. Kristenson, "The Naval Officer's Guide," 13th Edition, 152-153.
[20] Ibid., 227.
[21] Archana Yadav, "Role of Artificial Intelligence in leadership," February 2020, https://www.researchgate.net/publication/350663835_Role_of_Artificial_Intelligence_in_leadership.
[22] Priya Narayanan, Manuel Vindiola, Song Park, Anne Logie, Nick Waytowich, Mark Mittrick, John Richardson,
Derrik Asher, and Alexander Kott, "First-Year Report of ARL Director's Strategic Initiative (FY2023): Artificial Intelligence (AI) for Command and Control (C2) of Multi- Domain Operations (MDO)," May 2021, https://apps.dtic.mil/sti/pdfs/AD1132186.pdf.
[23] Idem.
[24] Gastón Sanglier Contreras, Aurora Hernández González, Ma Inés Serrano Fernández, Carmen B. Martínez Cepa & Juan Carlos Zuíl Escobar, "The Importance of the Application of the Metaverse in Education," July 15, 2022, https://www.researchgate.net/publication/362040311_The_Importance_of_the_Application_of_the_Metaverse_in_Education; Lt. Col. Ryan Kenny, "The Military Metaverse and the Future of Large-Scale Combat Operations," August 01, 2022, https://www.afcea.org/signal-media/cyber-edge/military-metaverse-and-future-large-scale-combat-operations.
[25] Pete Morrison, "Data in the military Metaverse: enterprise terrain management for training," July 26, 2022, https://militaryembedded.com/comms/communications/data-in-the-military-metaverse-enterprise-terrain-management-for-training.
[26] Jennifer Mcardle And Caitlin Dohrman, "The full potential of a Military Metaverse," War on the Rocks, February 18, 2022, https://warontherocks.com/2022/02/the-full-potential-of-a-military-metaverse/.
[27] Anusuya Datta, "What is Military Metaverse and How is it Different from Commercial Metaverse," July 29, 2022, https://www.geospatialworld.net/prime/what-is-military-metaverse-and-how-is-it-different-from-commercial-metaverse/.
[28] Benjamin F. Armstrong and John Freymann, "Developing the Naval Mind, USNI, 2021," 204-210.
[29] Andrew Eversden, "Into the military Metaverse: an empty buzzword or a virtual resource for the Pentagon?," Breaking Defence, April 12, 2022, https://breakingdefense.com/2022/04/into-the-military-metaverse-an-empty-buzzword-or-a-virtual-resource-for-the-pentagon/.
[30] Peter G. Northouse, Leadership Theory & Practice, 8th Edition, 344-345.

04

LEVELLING THE NIKOLA VAPTSAROV NAVAL ACADEMY CADET'S CURRICULUM USING THE SECTORAL QUALIFICATION FRAMEWORK FOR MILITARY OFFICERS

NEDKO DIMITROV

- **Author:** Captain (Navy) Nedko Dimitrov, Ph.D., Assoc. Professor, Nikola Vaptsarov Naval Academy (NVNA); Dimitrov has researched the following areas: national security, critical infrastructure protection, risk management, and education and qualification aspects. The views contained in this article are the author's alone and do not represent the views of NVNA.

- **Abstract:** An ad-hoc working group associated with the European Initiative for the Exchange of Young Officers was tasked to develop the SQF-MILOF.[1] Based on the EQF[2] and European officers' career development principles, SQF-MILOF defines the qualification requirements and the learning outcomes for the education and training conducted during officers' life cycle. In the validation stage, the defined learning outcomes of the SQF were compared with the requisites of the existing educational documentation supporting military education, which are in line with the Bulgarian national qualification requirements. This study aims to define the key learning outcomes in the NVNA cadet's curriculum and match them with the competence profile and the taxonomy of learning outcomes in SQF-MILOF. As a result of matching, the level of education and qualification and the organisational focus in NVNA education and training according to SQF-MILOF. The findings reveal that SQF-MILOF is well set up according to the Bulgarian national qualification requirements.

- **Problem statement:** How does the cadet curriculum of a higher educational institution, such as NVNA, correspond to SQF-MILOF categorization?

- **Bottom-line-up-front:** The NVNA cadet's curriculum is levelled as follows:
  - equivalent to EQF Level 6; and
  - focused on Single Arm/Branch (low tactical level).

  That proves the suppositions in the competence profile and the taxonomy of learning outcomes in SQF-MILOF in the early development stage - an informal validation of the SQF-MILOF is successful.

- **So what?** The existing cadet's curriculum should be analysed to present the legal base of its definition.

Need and Development of SQF-MILOF

From 2009 to 2014, the European Security and Defence College (ESDC) developed the first stage of the SQF-MILOF. This was in the context of the European Initiative for the Exchange of Young Officers inspired by Erasmus (Military Erasmus Program). The project, known as 'Comparison of courses based on competencies', was focused on the beginning of the military officer career. However, the Implementation Group[3] (IG) proposed that a comprehensive framework be developed to cover all critical stages of the military officer career.

The former Chairman of the European Union Military Committee, General Mickail Kostarakos, took the recommendations of the EU Military Training Group on board and, in July 2016, he invited the ESDC (supported by the European Union Military Staff) to consider establishing an SQF-MILOF for all levels of the military officer career. On December 15, 2017, the ESDC Secretariat invited member states to complete a questionnaire and nominate experts with relevant operational, educational, and training expertise to form an EU-level ad-hoc working group.[4] The purpose was to develop an SQF-MILOF for all levels of the military officer career.

The SQF-MILOF working group (WG) was convened in June 2018 under the auspices of the ESDC. During the work period, representatives of 21 member states and 13 national, international, and non-governmental organizations contributed to the process. The participants acted as input providers or as points of contact with national authorities and experts for developing SQF-MILOF.

SQF-MILOF aims to offer member states a cross-referencing tool for military qualifications so that qualifications obtained in one of the member states can be compared with similar qualifications granted by another. SQF-MILOF relates to lifelong learning for a particular sector: military officers.[5]

The WG defines SQF-MILOF as a pan-EU (transnational) qualifications framework for the military officer profession. More specifically, it is (Sectoral Qualifications Framework for the Military Officer Profession 2020):

- operationally relevant. SQF-MILOF is based on the competence profile of a generic European officer. The competence profile comprises the knowledge and skills needed in complex and multi-dimensional future operating environments. It constitutes what commanders expect from their officers in the event of unexpected and rapidly evolving internal and external security situations with military implications;
- learning relevant. SQF-MILOF describes the learning (profile) outcomes officers should

reach at specific moments in their careers. It describes what officers should know, and be able to do, with a certain degree of responsibility and autonomy, to match the competence profile of a generic European officer;

- EU relevant. SQF-MILOF is designed to be aligned and compliant with the European Qualification Framework (EQF)[6] for lifelong learning. By referencing national programmes against SQF-MILOF and the EQF, member states can compare their qualifications with similar qualifications granted by another member state; and
- nationally relevant. SQF-MILOF is designed to be aligned and compliant with EU members' National Qualification Frameworks (NQFs).[7] It is designed to be a commonly agreed tool to support the development of member states' educational programmes and course curricula.

The SQF-MILOF has been formulated as the learning outcomes (knowledge, skills, autonomy, and responsibility) an officer should reach in the eight competence areas:

- Four areas are assessed as core competence areas and cover professional competencies specific to the sector: Military service member; Military technician; Leader and Decision-Maker, and Combat-Ready Role Model; and
- Four areas are transversal competencies, which, although not specific to the profession, are modelled and adapted according to the characteristics of the profession: Communicator; Learner and Teacher/Coach; Critical Thinker and Researcher; and International Security/Diplomacy.

Levels	EQF 5	EQF 6	EQF 7	EQF 8
Knowledge	Comprehensive and specialised knowledge of the military domain.	Advanced knowledge of the military domain involving a critical understanding of the theory and principles of military science and art.	Highly specialised knowledge of the military domain as the basis of original thinking across multiple branches/services.	Possesses the most advanced knowledge of the military service and at the interface between the different military services
Skills	A comprehensive range of cognitive and practical skills required to develop various creative options and plans to implement specific military tasks and actions.	Advanced skills, demonstrating the innovation required to solve complex, unpredictable problems in the application of military science and art.	Specialised problem-solving skills required to advise and develop new knowledge and procedures and integrate knowledge from different branches or military services.	The most advanced and pecialized skills and techniques of the military domain required to solve critical problems in research and/or innovation, development of new knowledge, enabling joint employment of military structures
Responsibility/ Autonomy	Exercise limited command and control functions of military activities in a fluid and continuously changing, unpredictable operating environment.	Exercise command and control of complex tactical and technical activities and tasks, taking responsibility for decision-making in unforeseen circumstances. Take responsibility for managing professional development of subunits/units/structures under his/her responsibility.	Manage and transform complex military tasks and activities within unpredictable contexts with strategic consequences. Take responsibilities to lead and manage military organisations.	Demonstrate substantial authority, innovation, autonomy in the development of advanced and complex new military strategies and policies in the military domain including research. Take responsibility to lead and strategically manage joint organisations.

Table 1. SQF-MILOF Level Descriptors[8]

SQF-MILOF is built on four learning levels of complexity: Level 1[9] (equivalent to EQF 5[10]) to Level 4 (equivalent to EQF 8). The SQF-MILOF level descriptors are categories for the SQF-MILOF learning outcomes. Here, learning outcomes are high-level overarching statements intended to cover learning in all its expressions: formal education programmes, vocational training undertaken throughout the career, skills acquired on the job, experience from operations and exercises, and even informal learning from personal reading or professional and social interaction. The WG developed detailed descriptions of SQF-MILOF learning outcomes that describe the progression of learning complexity for the military officer profession, focused on military organizational architecture/operations. In this respect, the outcomes describe learning that is relevant for each of the following four dimensions:

- Single arm/branch (learning at this stage focuses on the individual and low tactical level);
- Single service (learning at this stage focuses on the tactical level);
- Joint/multiple services (learning at this stage focuses on the operational level); and
- Political/Civil-Military (learning at this stage focuses on the strategic level).

Bulgarian National Officers' Qualification Requirements

According to the national legislation, 'Military Officer' is a nationally regulated profession. The regulation is provided by state ordinances that set the minimum requirements for education and training of the students to become an officer at tactical[11] and operational[12] levels.

For the purposes of this paper, the author focuses on the bachelor level of education because the NVNA cadets' curriculums correspond to exactly this level of education. Based on the cited state ordinance, the training and its results correspond to Level 6 of the NQF (equivalent to EQF 6), including a minimum of 4,200 academic hours. Compulsory study subjects are thematically divided into groups with a minimum number of hours, as follows:

- Basic military training - 150 academic hours;
- General military training - 200 academic hours;
- Special military training - 700 academic hours;
- National security, resource management, and fundamentals of law - 150 academic hours;
- Academic practice and internship - 120 academic hours; and
- Language, leadership, and physical training - 700 academic hours.

The training has to provide:

- a wide-ranging and specialized professional training in the professional field of „Military Affairs";
- acquisition of adaptability skills according to the changing conditions of professional realization;
- acquisition of skills for independent professional work and teamwork; and
- conditions for educational mobility and international comparability of the acquired knowledge and abilities.

The NVNA cadets' curriculum is established based on the NQF Level 6, following the state ordinance and the specific qualification requirements issued by the Ministry of Defence. The curriculum comprises 240 ECTS (European Credit Transfer and Accumulation System) and offers a formal education with no military prerequisites.

Methodology of Assessment

The assessment aims to verify the extent to which the learning outcomes described in the SQF-MILOF can be used to assign an SQF-MILOF level and define a military focus forto National Military Qualification (NMQ), or improve or refine relevant national program/course curricula leading to an NMQ. To achieve the aim, a comparative analysis is conducted following the already developed methodology.[13]

DEFINITION OF LEVELLING AND MILITARY FOCUS

Levelling NMQ to the SQF-MILOF means defining the learning complexity of the NMQ by assigning it an SQF-MILOF level (EQF level). The SQFMILOF learning outcomes can help the relevant academic/national authorities identify the learning complexity of existing course (curriculum) qualifications or help them determine the learning complexity for new educational items based on the SQF-MILOF levels.

Defining the military focus of course qualifications implies matching the learning outcomes with one of the sections of the military organizational architecture as described by the Core Curriculum for Military Officers (MILOF-CORE): single arm/branch; single service; joint/multiple services; political/ civilian-military.[15] As far as the military professional community is concerned, there may be a need to understand not only how complex the learning for qualification is but also the focus of that qualification with regard to military organizational architecture/levels of operations based on the MILOF-CORE levels. This would facilitate a more precise comparison between similar qualifications, mobility of learners among the member states, and overall interoperability between teachers and cadets from different academies/universities.

A PROCESS OF VALIDATION

According to the SQF-MILOF 2020, the process of levelling NMQs to SQF-MILOF and defining the military focus comprises five steps :

- Step 1 - Identifying the NMQ and its constituent elements;
- Step 2 - Identifying NMQs' key learning outcomes (KLOs) in the core competence areas;
- Step 3 - Matching the NMQ's KLOs with the learning outcomes of the relevant learning areas in MILOF-CORE[15] focus (row) and at the appropriate SQF-MILOF level (column);

- Step 4 - Determining the SQF-MILOF level of the NMQ; and
- Step 5 - Determining the military focus of the NMQ.

Assessment Results

The assessment is carried out by performing a comparative analysis. As only equivalent values can be compared, it is necessary to reconfigure the learning outcomes of the NVNA cadet's curriculum to facilitate the classification. Identifying the KLOs of the existing cadet's curriculum at NVNA is a creative process. The following considerations are the main drivers in identifying the KLOs:

- Consider each constituent element (91 elements are analysed) of the NVNA qualification requirements.;
- Account for the eight competence areas defined in SQF-MILOF when regrouping constituent elements of the NVNA qualification requirements;
- Summarize the learning outcomes with equivalent or similar ideas in every one of the competence areas by generalizing the wording.

Following the above considerations, and based on the expertise and conducting a creative process, the KLOs were identified (see Table 2).

Competence area	KLOs
Military Service member	▶ Knowledge of English to the extent that allows for a conversation on professional and everyday topics, use of literature in English in the specialty, and preparation of the necessary documents for its activities in the interest of conducting activities within NATO. Compliance with the requirements of STANAG 6001 at level 2-2-2-2. ▶ good health and fitness, sensitive hearing and normal speech, normal vision and color perception; ▶ responsibility and potential for building high professionalism; ▶ creative thinking and spatial orientation; ▶ positive moral and volitional qualities; ▶ maintaining the ability for physical and mental loads for long periods, to work in complex conditions, adequacy of the reactions to various impacts, easy and fast adaptation to new conditions and other activities.
Military Technician	▶ List the technical specifications of relevant operating platforms under his/her responsibility and demonstrate their effective exploitation; ▶ Describe the combat service support capabilities of subunits during full spectrum operations. Explain the unit sustainability; ▶ Explain the C4ISR systems –structure, operation, Electronic warfare; ▶ Explain the resource management for the military units:
Leader and Decision-Maker	▶ Explain the model of team leader role in military organizations in the context of hierarchy and a wide spectrum of situations; ▶ Describe the specifics in the relationship OF-NCO based on the manuals and ethics. ▶ Describe relevant leadership concepts, theories, principles, and good practices. Demonstrate their implications in a military environment.
Combat-Ready Role Model	▶ Demonstrate commitment in actions engaging values and ethics of the military organisation in peacetime, high intensity, and peace support operations; ▶ Explain the role of international humanitarian law, national law, and military regulations in order issuing and following; ▶ To know the Naval history and reflect on the evolution of arms, forces, organizations, conflicts; ▶ Demonstrate a high level of morale and discipline of subordinates, and appropriate physical and psychological fitness; ▶ Demonstrate gender awareness and its application in a military environment; ▶ Demonstrate cultural awareness and its application in a military environment.
Communicator	▶ Describe the way to convey relevant messages to a broad audience; ▶ Demonstrate ability to provide written and oral orders and reports; ▶ Demonstrate ability to promote opinion and arguments in the military environment, adjusting to a different type of audience; ▶ Demonstrate ability to properly interact with others.
Learner and Teacher/Coach	▶ Describe the models of mentoring, coaching, training, and teaching and their adjustment to the military context; ▶ Describe the organisation and procedures of basic military training, drills, and exercises at the team level or equivalent.
Critical Thinker and Researcher	▶ Explain the implementation of the analysis and data processing methods in planning the operations at various levels; ▶ Explain the evolution of the main factors of the operating environment; ▶ Analyse the effects and challenges of new technologies on the military domain
International Security/ Diplomacy Actor	▶ Describe security, defence and conflict management in the context of diplomacy; ▶ Analyse the security dimensions of different theories in International relations and the role of different instruments for national goals completion.

Table 2. KLOs of NVNA cadets' curriculum. (Source: author's research)

The comparative analysis requires matching NVNA's KLOs with the learning outcomes of the relevant learning areas in SQF-MILOF. This is a creative process because it is impossible to have full compliance between both sides. Matching is the most creative and challenging part of this analysis. During this step, another generalization of the KLOs has to be made to summarize the main idea and formulate the essence for the learning areas within the framework of the competence areas.

Table 3 shows an example of a comparative analysis result. Columns 1 and 2 show defined KLOs and corresponding MILOF-CORE learning outcomes, respectively. Columns 3 and 4 are marked with the corresponding SQF-MILOF level and MILOF-CORE focus, respectively.

NVNA Key Learning Outcomes	**MILOF-CORE Learning Outcomes**	**SQF-MILOF Level**	**MILOF-CORE Focus**
Explain the principles of combined arms forces employment at the tactical level in accordance with national/ multinational doctrine, across the full spectrum of operations.	*Explain the principles of employing combined arms forces at the tactical level in accordance with national/ multinational doctrine, across the full spectrum of operations > Explain the tactics, techniques and procedures specific to the particular service for the full spectrum of operations at national/ multinational levels with realistic consideration of the possibilities of the different branches.* Competence area: Military Service member Learning Area: Employment of forces - Full Spectrum Operations	2	Single Service (tactical)
Apply the risk assessment and decision-making process specific to the full spectrum of operations at the low tactical level	*Apply the military decision-making process (MDMP) specific to the arm/ branch for the full spectrum of operations at the low tactical level* Competence area: Military Service member Learning Area: Military decision-making process	2	Single Arm/Branch (low tactical)
Apply at low tactical level the basic norms of national and International Humanitarian Law and their principles relevant to the responsibilities and positions	*Outline the range of national, EU and international law and military regulations with relevance to the military domain > Describe the basic norms of International Humanitarian Law and the application of its principles relevant to their responsibilities and positions by emphasising the issues that might arise on the battlefield at a tactical level* Competence area: Military Service member Learning Area: National and International Law	1	-

Explain the process of strategy formulation at the international and national level as well as the responsible bodies	*List the national and international organisations structures and briefly describe their roles and responsibilities > Describe the process of strategy formulation at the international and national level* Competence area: Military Service member Learning Area: National and International Security Policy and Strategy	1	-
List the technical specifications of relevant operating platforms under his/her responsibility and demonstrate their effective exploitation	*Explain technical specifications of relevant operating platforms under his/ her responsibility > Demonstrate the effective exploitation of the operating platform (weapon system) under their responsibility with due consideration of safety measures* Competence Area: Military Technician Learning Area: Employment of weapon/ operating platform/ systems	2	Single Arm/Branch (low tactical)

Table 3. Result of matching the KLOs with the learning outcomes of the relevant learning areas in MILOF-CORE focus and at the appropriate SQF-MILOF level. (the table is created by the author)

The conducted analysis yielded the following results:

- Fifteen KLOs were assessed to be equivalent to EQF Level 6 of SQF-MILOF and eleven KLOs were assessed to be equivalent to EQF Level 5. The core competence areas that cover professional competencies (specific to the sector) were assessed to be equivalent to Level 6 for the most part (13 vs. 6).
- Eight KLOs are focused on Single Arm/Branch (low tactical level) while one focuses on tactical level.

Conclusion

Based on these results, the main conclusion is that an informal validation of the SQF-MILOF is successful. That is, the defined SQF-MILOF Level 2 equals Bulgarian NQF Level 6. Notably, as the NQF is in full compliance with EQF, it can be concluded that– SQF-MILOF Level 2 is equivalent to EQF Level 6 (that was a supposition when developing SQF-MILOF).

Because the analysis in the paper is limited to the SQF-MILOF Level 2, it is necessary to assess at minimum one more level (e.g., Level 3) to consider the validation as generalizable. Once validated, the SQF MILOF will help member states to reference their own curriculums and courses and facilitate cadets and officer's educational mobility in sense of Erasmus+ program. The EU Common Security and Defence Policy will benefit from SQF MILOF implementation through aligning the member state's educational efforts and creating common understanding of educational and qualification requirements.


© shutterstock.com/metamorworks

05

EVALUATION OF THE CRITICAL THINKING COURSE OF THE NATO INNOVATION HUB

FABIO IBRAHIM, ARNEL ERNST,
DORIS ZAHNER, YVONNE R. MASAKOWSKI,
PHILIPP YORCK HERZBERG

▶ **Authors:** FFabio Ibrahim is a research associate officer at Helmut-Schmidt University in Hamburg, Germany. His research interests include military psychology, psychometrics and social network analysis. Mr Ibrahim works with specialised forces of the German Armed Forces and police in aptitude diagnostics and stress management. He is motivated to share scientific findings from psychology in the form of personnel development measures to increase the performance of individuals and organisations.

Arnel Ernst is an officer in the German Army and graduated with a Master of Science degree in psychology in 2022. His Master's Thesis evaluated NATO's Critical Thinking course. He shows great interest in military psychology and has been part of the Critical Thinking Working Group of the NATO Innovation Hub since 2021.

Dr. Doris Zahner is the Chief Academic Officer at the Council for Aid to Education (CAE). In addition, Dr. Zahner is an adjunct associate professor at Barnard College and Teachers College, Columbia University, and New York University. She holds a Ph.D. in cognitive psychology and an Master of Science in applied statistics from Teachers College, Columbia University. Besides her professional and academic interests, Dr. Zahner is an avid bird watcher and SCUBA diver.

Dr. Yvonne R. Masakowski is a Research Fellow at the US Naval War College, Newport, RI. Her career spans 27 years as a distinguished scientist and Professor supporting the US Navy as a Human Factors Psychologist and Professor at the US Naval War College. Dr. Masakowski also served as a consulting Principal Scientist with the NATO Innovation Hub and contributed to the development of NATO's online Critical Thinking course.

Prof. Dr. Philipp Yorck Herzberg is a professor of personality psychology and psychological assessment at the Helmut Schmidt University of the German Armed Forces in Hamburg. Prof. Herzberg´s primary research focus is personality in partnerships, personality prototypes, optimism, and personality and health. Besides his work as a university professor, he is involved in military projects in applied and operational psychology with military units such as the military police or Human Intelligence forces. The views contained in this article are the authors' alone.

▶ **Abstract:** NATO's mission is the protection of its member states' territorial sovereignty, political security, and stability. Developments in geo- and military-strategic scopes are insufficient to achieve this aim ultimately. The future war increasingly takes place in cyber and information

space to undermine the worldview and integrity of the general population and military personnel through digital and psychological interventions. To stabilise the resilience of citizens and, thereby, the democratic resilience of states in times of digital information diversity, the ability to select, assess, evaluate, and use information in a goal-oriented manner is crucial. The psychological construct of Critical Thinking (CT) comprises these vital abilities. Due to the importance of efficiently dealing with information for military personnel, NATO has developed a Critical Thinking training course to increase this ability in an intervention-based manner. In this experimental study, we examine the effect of the Critical Thinking course to determine whether one's Critical Thinking ability can be increased in general and whether NATO's course is an effective intervention. A pilot experimental online study was conducted with n = 85 subjects (intervention group vs control group) and a correlational study with n = 122 subjects. Surprisingly, comparing the experimental and control group indicated that processing the pre-test and post-test alone improved Critical Thinking skills within the subjects. However, there was also a trend of interaction between group and time, indicating the positive influence of the Critical Thinking course. The analysis of demographic influences only indicated residency as a significant factor regarding Critical Thinking ability. The results of this study indicate that Critical Thinking ability is increasable. Future studies should examine which interventional aspects are most effective in raising the Critical Thinking ability to construct evidence-based efficient Critical Thinking courses for the military and the general population.

- **Problem statement:** Does NATO's self-designed Critical Thinking course show its effect, and are there factors influencing Critical Thinking?

- **Bottom-line-up-front:** Can Critical Thinking be increased through an online intervention?

- **So what?** This study shows that Critical Thinking—which is associated with improved information handling, planning, decision-making skills, and moral resilience—is a changeable skill. Therefore, military and civil institutions should explore the construct in more depth and, based on the results, develop effective interventions to train their personnel, especially their leaders.

The Power of Critical Thinking

> *[…] As excellent as our cognitive systems are, in the modern world we must know when to discount them and turn our reasoning over to instruments — the tools of logic, probability, and Critical Thinking that extend our powers of reason beyond what nature gave us. Because in the twenty-first century, when we think by the seat of our pants, every correction can make things worse, and can send our democracy into a graveyard spiral*[1].

The quote above is how Steven Pinker, an American psychology professor at Harvard University, describes the importance of Critical Thinking (CT) to society. Pinker explains that one should not rely solely on the given cognitive abilities and that the power of CT must be used to ensure the security of society. Due to the ever-changing circumstances of the present, CT has become a vital skill in today's world. CT skills are critical in making well-informed, accurate, and conscious decisions. CT is a crucial skill in order to evaluate information, form hypotheses, enhance problem-solving, and make better decisions. Thus, the development of CT is a critical skill and one that is necessary to meet the ever-increasing demands of 21st-century life and professions[2].

Critical Thinking skills are increasingly necessary for education, especially for leaders[3]. Indeed, many nations, academic institutions, and organisations contend that CT skills facilitate an individual's ability to adapt rapidly to environmental changes[4]. CT is one of the top three essential skills cited as an antidote to misinformation[5]. Nations recognise the increased need for developing CT skills that challenge the current "fake news" environment as it impacts societies and global security.

THE DEFINITION AND NOMOLOGICAL NETWORK OF CRITICAL THINKING

There is a wide range of various approaches and definitions related to the concept of CT. Therefore, it is a challenge to reach a consensus on one definition. For example, Dwyer et al. describe CT as a metacognitive process which consists of skills (e.g., analysis and evaluation) that, when applied, increase the likelihood of a logically correct conclusion to an argument or solution to a problem[6].

After approximately 40 years of research on this topic, CT is defined as follows:

> *CT is the intellectually disciplined process of actively and skillfully conceptualising, applying, analysing, synthesising, and/or evaluating information gained or generated through observation, experience, reflection, reasoning, or communication as a guide to belief and action. CT is the process of analysing, evaluating, drawing conclusions, and interpreting resources and activities*[7].

However, there are intersections on which each definition of CT agrees, and this consensus is that CT consists of both skills and dispositions and includes affective and cognitive domains[8, 9]. Due to the ambiguity of CT, triangulation with other constructs is essential to gain an understanding and a psychometric lead to the construct. In particular, correlations with the 'Big 5' (neuroticism, extraversion, openness, conscientiousness, agreeableness), as a strongly validated scientific model, can be used to enact a construct in personality psychology. Therefore, correlations between the 'Big 5' and CT were examined. The dimension Openness is associated with creativity, curiosity, and esthetic interest and correlates positively with CT (r = .40, p =.009). These correlations are unsurprising, as openness is also related to crystallised intelligence, and critical thinkers are described as curious, flexible, and open-minded[10,11].

Schön established an overarching connection between CT and metacognition, as the active control over cognitive processes, in his initial research[12]. Metacognition helps develop CT because it requires meta-level operations[13]. Both constructs represent different forms of higher-order thinking[14], executive processes[15], and ventures to further learning[16]. Individuals with high CT skills are also good at using metacognition[18].

Executive functions also impact CT[18]. The term executive function is a broad term that describes, among other things, a variety of higher-order cognitive functions. These let individuals decide how to behave and adapt to new situations[19,20].

Thinking dispositions describe the will to engage in certain thinking processes[21,22]. This volition has implications for people's propensity to engage in CT. Various researchers suggest that these dispositions are critical to applying CT skills[23]. Facione and Facione see truth-seeking, the need for cognition, open-mindedness, analyticity, systematicity, confidence, curiosity, and maturity as dispositions that are helpful for CT[24]. The need for cognition is considered a disposition for CT]. CT is also positively associated with emotional intelligence (r = .46, p < .01) and the integrative conflict management style (r = .47, p < .01)[25].

THE ROLE OF CRITICAL THINKING IN THE MILITARY

Military operations are complex and difficult to predict. Most international operations focus on a peace-enforcing format in regional conflicts such as Syria and Iraq[26]. These operations are accompanied by uncertainties regarding participating parties' intentions, capabilities, and strategies. These uncertainties require well-trained commanders, officers, and staff personnel. Former US General of the Army George Marshall said that leaders must be prepared to deal with change, and unexpected difficulties so mental processes are not inhibited when atypical events occur[27]. Military leaders find themselves in situations where

the rules of engagement or historical warfighting principles cannot be applied. In these situations, novel approaches to solutions, which are the result of CT, are essential to mission success. Here, soldiers must develop new systems based on evaluated information[28,29]. Research within the US military has shown that leaders who have completed CT training have improved from the perspective of tactical command. Additionally, they demonstrate better outcomes in terms of qualitatively and quantitatively higher alternative and contingency plans[30], better cross-cultural competence[31], and higher moral resilience[32]. The teaching and application of CT are seen as critical components for operational commanders to implement operational objectives[33].

NATO has also seen the relevance of this issue and, in the report on Joint Operations 2030 published in 2011, cited CT as an issue that needs more research. Senior Operational Analyst at NATO's Allied Command Transformation (ACT) Dani Fenning describes efforts to help NATO „think differently" by working with colleagues to build new capabilities using CT[34]. NATO's Human Factors and Medicine Panel sees CT as necessary to ensure operational agility and adaptability as well as good conduct of operations in NATO's multinational framework despite potential cultural differences in nations and branches[35]. Therefore, training on this topic is indispensable. NATO believes that CT is a learnable skill and intends to train its personnel in the skill. Thus, the former Supreme Allied Commander Transformation (SACT), General André Lanata, tasked the NATO Innovation Hub to develop a course to improve CT. Therefore, over approximately 1.5 years, the Innovation Hub developed and evaluated a CT course, and in this study, we will examine the effects of this course on the participants' CT ability.

CRITICAL THINKING INTERVENTIONS

In academic discussions and research, CT is divided into three perspectives. 1.) The innate trait (dispositional perspective) 2.) The cognitive development (emergent perspective), and 3.) The behavioural and skills perspective (state-perspective).

Various research findings show that CT can be improved using courses[36,37]. Educational science and psychology researchers view CT as a skill that can be learned and improved[38]. Thus, certain sub-skills of CT, such as verbal reasoning skills, argument analysis skills, thinking as a hypothesis, decision-making, and problem-solving skills, can be learned without including biases[39] and connected based on elaboration. Again, the metacognitive aspect is highly relevant.

In 1998, Halpern designed a four-part empirically based model to teach and learn CT. Here, he divided it as follows. 1.) First, the learner should be prepared for the strenuous

cognitive work; 2.) There should be instructions for teachers on the skill of CT; 3.) Training should bring structural aspects of problems and arguments closer to promote the cross-contextual transfer of CT skills, and; 4.) A learner's metacognition should be encouraged to monitor progress.

As the CT intervention in this study, the NATO Critical Thinking course is designed according to the four-part model empirically based on Halpern to teach CT facets as effectively as possible[39]. There is a divergence of opinion as to whether CT can be learned or not[40,41]. However, we hypothesise that CT can be increased through intervention and examine the effect of the NATO Critical Thinking course on CT ability.

Hypothesis 1: *The CT course positively affects Critical Thinking ability.*
Hypothesis 2: *Participants who received the CT Course will outperform those who did not.*

Because of the prevalence of the topic of CT in North America more than on other continents (North America vs other continents) in both military and civilian settings. It is hypothesised that subjects with a residency on this continent will exhibit significantly better CT performance than subjects from other continents[42].

Hypothesis 3: *North American residency positively impacts Critical Thinking ability.*

The research findings of Abrami et al., showed that educational level has no significant effect on CT ability, so it is assumed that there is no significant difference in pre-test scores between all groups.

Hypothesis 4: *Educational level does not influence Critical Thinking skills.*

Based on the findings of Endsley et al., it is hypothesised that individuals in the active military achieve significantly better scores than civilian individuals because they are trained in decision-making and problem-solving strategies in situations[43].

Hypothesis 5: *Military affiliation has a positive effect on Critical Thinking skills.*

Method

The course's entire process is described below. Further, the following section describes a cross-hypothesis method involving the NATO Innovation Hub's CT course and the acquisition of samples and materials.

THE NATO CRITICAL THINKING COURSE

Due to the mentioned relevance of CT for NATO, the former SACT tasked the NATO Innovation Hub in late spring 2021 to develop a CT course. This course is intended to educate both NATO civilian and military personnel in CT to increase this essential skill in a time of ever-changing circumstances.

The working group decided to execute the course and assessment using an online platform hosted on the NATO Innovation Hub website due to COVID-19, despite research showing that online classes are less successful at teaching CT than in-person meetings[44].

The course was executed between June 1, 2022, and July 1, 2022. It consisted of an introduction, five instructor-led lessons, and a summary class. The weekly learning effort and associated tasks were designed to be between 3-5 hours.

The chosen topics for the course were 1.) Cognitive Bias and Decision-Making; 2.) Cultural biases; 3.) Logic and reasoning; 4.) Improving Critical Thinking, and; 5.) Data Analysis. The structure of each lesson was always divided into five subcategories, which corresponds to Halpern's empirical model of learning from CT. Each class started with the 1.) Lesson outline: The lesson's topics were introduced so the learner could understand what to expect from the course; 2.) Lesson materials consisted of the lecturer providing PowerPoint presentations (approx. 20 - 30 minutes) and videos; 3.) A quiz of 5-6 questions in multiple-choice format assessed the targeted content; 4.) Assignments, which required a transfer of knowledge and skills, and 5.) Other resources provided further resources on the lesson topic for those interested.

Approximately three days after the lessons were released, participants could attend a Q&A session (Approx. 1 hour) with the instructor. The instructors were experts in their field and diverse in knowledge, experience, and expertise. Again, the intention was to represent as diverse a spectrum of views and approaches as possible. The lecturers were free to choose how they structured and delivered their lessons.

PARTICIPANTS AND PROCEDURE

The sample of this study participated in the CT Assessment of the NATO Innovation Hub from June 1, 2022, to July 1, 2022, consisting of n = 156 participants for the pre-test and

n = 85 participants (male = 75.3%) for the pre- and post-test. N = 40 participants with a mean age of 35.57 years ([21, 72], SD = 10.50, Md = 33.00; male = 77.5%) were in the intervention group and n = 45 participants with a mean age of 35.57 years ([21, 72], SD = 10.50, Md = 33.00; male = 73.3%) were in the control group. N = 47 participants reported having at least a master's degree or equivalent, and n = 30 participants (35.3%) reported being active military personnel.

Participants in this study were primarily recruited through LinkedIn. A link was shared there, allowing interested participants to self-select for either having their CT skills measured or participating in the course. After successful participation in the course (completing the pre-test & post-test, all quizzes, and assignments), participants in the intervention group were awarded a certificate.

A 2x2 mixed design was used to examine the course effect (between-subject factor: course participation vs no course participation) x (within-subject factor measurement repetition: pre-test vs post-test). The pre-test and post-test were administered on the NATO Innovation Hub online platform before „Lesson 1" and after „Lesson 5," respectively. Interested participants registered in advance of the course.

MEASUREMENT

At the beginning of the online survey, participants had to consent to a privacy statement for participation, followed by instructions and a practice explaining the platform's functionality. The online assessment consisted of the Selected Response Questions (SRQs) as a subtest of the Collegiate Learning Assessment (CLA+). The demographic data were asked at the end of the testing. The CLA+ is an instrument for measuring CT and written communication. In its complete form, the CLA+ includes a 60-minute performance task (PT) and a 30-minute set of selected response questions (SRQs). In this study, the SRQs were used for economic reasons. The SRQ presents participants with 25 items in a multiple-choice format with four items (one being correct) and one or two documents to refer to when answering each question. The supporting documents included a range of information sources such as letters, memos, photographs, charts, and newspaper articles. SRQ composite score values can range from 400 to 1600. The SRQs consisted of three subsections: Scientific and Quantitative Reasoning (SQR), Critical Reading and Evaluation (CRE), and Critiquing an Argument (CA); they show good reliability ($\alpha = .79$).

DATA ANALYSIS

Statistical data were analysed using the „SPSS" (IMB SPSS Statistics version 27). A paired t-test (a statistical test that compares the means of two samples) was calculated to examine the difference between pre-test and post-test CLA+ scores (H1). A 2-way mixed

ANOVA with repeated measures was computed to explore the course's efficacy in contrast to the control group without intervention (H2). T-tests for independent samples were used to examine CT ability differences (H3; H5). Finally, a one-way ANOVA was used to compare multiple groups regarding differences in CT ability.

Results

HYPOTHESIS TESTING

Hypothesis 1 predicts that participation in the CT course positively affects CT ability. The average post-test scores should therefore be higher than the average pre-test score. The paired t-test indicates a significant improvement in the score after the intervention group completed the course, $t(84) = -6.02$, $p < .001$. Thus, H1 can be accepted.

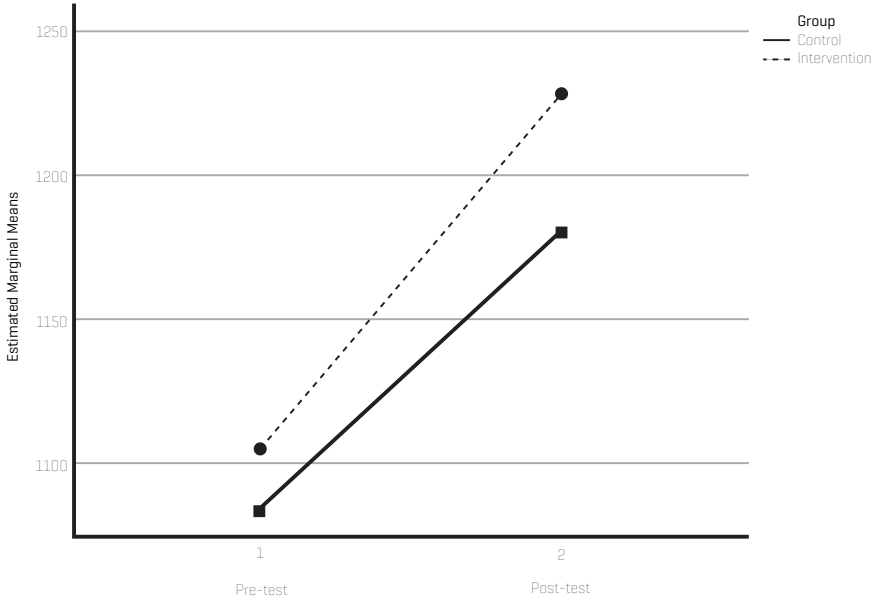
For H2, it is assumed that the assessment scores improve significantly between the two measurement points (pre-test to post-test) in the intervention group but not in the control group. A significant difference would suggest an impact of the course on CT ability. The normality precondition of the control group regarding the post-test could not be met. Nevertheless, the mixed ANOVA was calculated since a normal distribution can be assumed for an $n > 30$.[45]

For H2, the mixed ANOVA showed no significant interaction between pre-test/ post-test (time) and group membership $F(1, 83) = 0.54$, $p = .463$, partial = .01. A significant main effect for pre-test and post-test occurred $F(1, 83) = 36.47$, $p < .001$, partial = .31, indicating that all participants improved in the pre- and post-test assessment regardless of group membership. The results of the Mixed ANOVA are shown in Table 1 and Figure 1. Thus, H2 can be rejected.

Dependent variable	Main effect time		Interaction effect Time x group	
	F	n^2	*F*	n^2
Pre-test Score	36.47***	.31	0.54	.01

*Note. n=85; * p < .05, ** p <.01 *** p <.001*

Table 1. Results of 2×2 mixed ANOVA: main effects of time and group, and interaction effect of time × group.



Note. $n_{intervention}$ = 40, $n_{control}$ = 45, n_{total} = 85

Figure 1. Interaction effect (time × group) for the variables' pre-test score and post-test score.

Hypothesis 3 assumes that residency influences CT ability so that individuals from North America achieve better scores than individuals from other continents. Therefore, a t-test for independent samples was calculated as the prerequisites for a t-test were met.

The calculations showed that there was a significant difference in CT ability as a function of residency, with subjects from North America (M =1163.96, SD =225.07) scoring on average about 88 points higher in the score than subjects from other continents (M =1075.71, SD =176.68), t(120) = –2.13, p = .036, CI95% [–170.455, –6.051]. Thus, H3 can be accepted.

For Hypothesis 4, it is assumed that the education level has no significant influence on participants' CT ability. To test H4, a one-way ANOVA was undertaken to examine whether there was a difference in pre-test scores as a function of education level. Education level was divided into 4 groups: No academic degree (n = 15, M = 1074.20, SD = 149.04), Bachelor's degree or equivalent (n = 35, M = 1090.89, SD = 205.85), Masters' degree or equivalent (n = 49, M = 1115.65. SD = 184.66), and Doctoral/ Professional or equivalent (n = 23, M = 1068.26, SD = 208.70). The group with no academic degree contained two outliers, which we did not remove from the sample [45]. Pre-test scores did not differ statistically significantly for the different education levels, $F(3, 121) = .40$, $p = .752$, $\eta^2 = .01$. Results are shown in Table 2. Thus, H4 can be accepted.

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	44398.99	3	14799.66	0.40	.752
Within Groups	4346789.48	118	36837.20		
Total	4391188.47	121			

Note. Number of participants No academic degree *n* = 15, Bachelor's degree or equivalent *n* = 35, Master's degree or equivalent *n* = 49, Doctoral/Professional or equivalent *n* = 23, Total *n* = 122; *df* = degrees of freedom; * *p* <.05 ** *p* <.001

Table 2. Results of One Way ANOVA for differences between Education Level in pre-test score.

Hypothesis 5 assumed that military affiliation impacts CT ability and that military individuals achieve a better pre-test score than civilian individuals. A t-test for independent samples was calculated to examine group differences as the prerequisites for the calculations were met.

The results indicate there is no significant difference in average CT ability between active military personnel (M = 1065.98, SD = 175.04) and civilians (M = 1111.19, SD = 198.18), t(120) = –1.27, p = .207. Thus, H5 can be rejected.

Discussion

THE EVALUATION OF THE CRITICAL THINKING COURSE

Regarding the first objective of this work, participants in the intervention group increased their CT ability between the pre- and post-test. These results align with the findings of Abrami et al. (2008). However, an improvement in the score in the control group was also evident. Therefore, participating in the CT assessment alone may have improved average assessment scores. However, there is a small interaction effect, as a trend indicated (Fig 1), so a larger sample of the respective groups could yield a significant interaction effect.

Several potential factors can explain the lack of a significant difference between the intervention and control group regarding the CT post-test scores. First, it could have been that individuals from the intervention group did not carefully follow and process the lecture and the associated tasks and were only concerned with giving answers so that they would receive the certificate at the end of the course. This assumption is also reinforced based on glimpses of the answers given. This focus on obtaining the certificate rather than improving CT skills may have led to a loss of motivation and, thus, a lower post-test score[46]. On the other hand, the learning behaviour of the control group between the two measurement points could not be controlled. Maybe the first feedback also motivated the control group participants to increase their CT ability, so they learned to construct inherent subjects themselves.

Further, the pre-test alone may have had an "intervention effect." Thus, there might have been a triggering of metacognitive factors such as information management strategies, monitoring, and debugging strategies in the absence of knowledge of answers, thus resulting in an impulse to CT.

In addition, there may have been a repetition effect between the pre-test and post-test. Also, a Randomised Control Study (RCT) could minimise interpersonal group differences and provide more accurate results by decreasing the noise to capture the intervention's effect more distinctly.

The results show that CT training facilitates the development of CT skills and that a course and even a test of CT skills may be more efficient than waiting for an individual to acquire CT skills via experience over time.

INFLUENCING FACTORS ON CRITICAL THINKING ABILITY

Hypothesis H3 assumed that individuals with residency in North America would have better CT ability than individuals with residence in other continents because of the attention that CT is given in North America. The results of this study confirmed these findings. In addition to the attention that CT receives in North America, the results of this study may also indicate that American culture endorses a type of interaction that reinforces CT and allows for open exchange[47].

Further, based on the research findings of Abrami et al. (2018), it was hypothesised that the level of education does not affect CT ability (H4). Again, based on the results of this study, the findings are aligned with previous research. These results could show that the ambitions of teaching CT are pursued equally at all levels of education. Hypothesis H5 assumed that individuals with military affiliation would have better CT ability than civilians. However, the results showed no significant difference. The lack of difference could indicate that the military does not provide adequate training in CT[48] or because the topic also increases attention and is taught in the civilian world[49].

LIMITATIONS AND OUTLOOK FOR RESEARCH

Participation in the research was voluntary and implied an existing interest in the subject of CT. Further, the intervention group was eligible to receive a certificate upon finishing all lessons and the assessments. This external motivation potentially caused individuals to focus only on the incentive and not adequately complete the course. In contrast, the control group could only receive their score information as an incentive. However, this offer was hardly taken up, so it can be assumed that strong intrinsic motivation was prevalent in the control group. Future research could use an alternative course with a different subject (e.g., a language) to incentivise the control group and partially control for intrinsic engagement with CT due to time expenditure with another topic.

Another point of criticism is the sample size. A larger and more randomly assigned sample would increase the statistical power. Furthermore, the environmental conditions of the online assessment could not be controlled. There is, therefore, a possibility that the testing conditions differed. The pre-tests and the post-tests were administered on different days and, in some cases, restarted at different course times, reducing the comparability between the groups.

Furthermore, there may have been misunderstandings regarding the questions. For example, several subjects were not native English speakers, which may have led to incorrect answers due to a lack of understanding. Despite the limitations, the study results are meaningful for a deeper understanding and future research on CT.

PRACTICAL IMPLICATIONS AND CONCLUSION

This study indicates that a CT intervention can increase CT ability. However, it also suggests that a test alone improves CT ability and could, therefore, also function as an intervention. Even though there was no significant difference between the intervention and control group post-test scores, an interaction trend could be recognised in which the intervention group slightly differed from the control group after completing the CT course.

As NATO plans to train its personnel on this topic in the future, the findings of this work could be considered for future training projects. For example, a test can be conducted to prepare the participants and to set intrinsic incentives to deal with this topic. Further, no factors could be found except for residency in North America, which influences CT ability. Thus, it can be argued that every individual can improve their CT ability and should strive to do so. The fact that individuals from North America have a better CT ability than individuals from other continents may be related to the relevance of this topic on the continent. Thus, by increasing the awareness of CT, other militaries and societies, in general, could increase the CT abilities of their residents.

In conclusion, this work can provide a foundation for future teaching projects in both civilian and military life. CT is especially powerful in a situation of uncertainty and complexity and should be taught as early as possible to prepare for an increasingly complex and constantly changing world. The Swiss biologist and pioneer of developmental psychology Jean Piaget aptly described the need as early as 1952, and this quote shall conclude this work:

> *The principal goal of education in the schools should be creating men and women who are capable of doing new things, not simply repeating what other generations have done; men and women who are creative, inventive, and discoverers, who can be critical and verify, and not accept, everything they are offered*[50].

Endnotes

[1] Steven Pinker, Rationality: What It Is, Why It Seems Scarce, Why It Matters, London: Allen Lane, an imprint of Penguin Books, 2021.
[2] Amy Shaw, Ou Lydia Liu, Lin Gu, Elena Kardonova, Igor Chirikov, Guirong Li, Shangfeng Hu, et al, "Thinking Critically about Critical Thinking: Validating the Russian HEIghten® Critical Thinking Assessment," Studies in Higher Education 45, no. 9 (September 1, 2020): 1933–48, https://doi.org/10.1080/03075079.2019.1672640.

[3] Drik Van Damme and Doris Zahner, "Does Higher Education Teach Students to Think Critically?," 2022, https://www.oecd-ilibrary.org/content/publication/cc9fa6aa-en.
[4] Sharon Bailin and Harvey Siegel, "Critical Thinking," In The Blackwell Guide to the Philosophy of Education, edited by Nigel Blake, Paul Smeyers, Richard Smith, and Paul Standish, 181–93, Oxford, UK: Blackwell Publishing Ltd, 2007, https://doi.org/10.1002/9780470996294.ch11.
[5] Samuel Woolley and Philip N. Howard, eds. Computational Propaganda: Political Parties, Politicians, and Political Manipulation on Social Media, Oxford Studies in Digital Politics, New York, NY: Oxford University Press, 2019.
[6] Christopher P. Dwyer, Michael J. Hogan, and Ian Stewart, "An Evaluation of Argument Mapping as a Method of Enhancing Critical Thinking Performance in E-Learning Environments," Metacognition and Learning 7, no. 3 (December 2012): 219–44, https://doi.org/10.1007/s11409-012-9092-1.
[7] B. Jean Mandernach, "Thinking Critically about Critical Thinking: Integrating Online Tools to Promote Critical Thinking," InSight: A Journal of Scholarly Teaching 1 (August 1, 2006): 41–50, https://doi.org/10.46504/01200603ma.
[8] Diane F. Halpern, Thought and Knowledge: An Introduction to Critical Thinking, 5th Ed. Thought and Knowledge: An Introduction to Critical Thinking, 5th Ed. New York, NY, US: Psychology Press, 2014.
[9] Kelly Y. L. Ku and Irene T. Ho, "Metacognitive Strategies That Enhance Critical Thinking," Metacognition and Learning 5, no. 3 (December 2010): 251–67, https://doi.org/10.1007/s11409-010-9060-6.
[10] Jennifer S. Clifford, Magdalen M. Boufal, and John E. Kurtz, "Personality Traits and Critical Thinking Skills in College Students: Empirical Tests of a Two-Factor Theory," Assessment 11, no. 2 (June 2004): 169–76, https://doi.org/10.1177/1073191104263250.
[11] Michael C. Ashton, Kibeom Lee, Philip A. Vernon, and Kerry L. Jang, "Fluid Intelligence, Crystallized Intelligence, and the Openness/Intellect Factor," Journal of Research in Personality 34, no. 2 (June 2000): 198–207, https://doi.org/10.1006/jrpe.1999.2276.
[12] Donald A. Schön, The Reflective Practitioner: How Professionals Think in Action, New York: Basic Books, 1983.
[13] Deanna Kuhn, and David Dean Jr., "Metacognition: A Bridge Between Cognitive Psychology and Educational Practice," Theory Into Practice 43, no. 4 (November 2004): 268–73. https://doi.org/10.1207/s15430421tip4304_4.
[14] David R. Krathwohl, "A Revision of Bloom's Taxonomy: An Overview," Theory Into Practice 41, no. 4 (November 1, 2002): 212–18, https://doi.org/10.1207/s15430421tip4104_2.
[15] John H. Flavell, "Metacognitive Aspects of Problem Solving," The Nature of Intelligence, 1976.
[16] Paul R. Pintrich, "The Role of Metacognitive Knowledge in Learning, Teaching, and Assessing," Theory Into Practice 41, no. 4 (November 1, 2002): 219–25, https://doi.org/10.1207/s15430421tip4104_3.
[17] Carlo Magno, "Investigating the Effect of School Ability on Self-Efficacy, Learning Approaches, and Metacognition," Online Submission 18, no. 2 (2009): 233–44.
[18] Shuangshuang Li, Xuezhu Ren, Karl Schweizer, Thomas M. Brinthaupt, and Tengfei Wang, "Executive Functions as Predictors of Critical Thinking: Behavioral and Neural Evidence," Learning and Instruction 71 (February 2021): 101376, https://doi.org/10.1016/j.learninstruc.2020.101376.
[19] Adele Diamond, "Executive Functions," Annual Review of Psychology 64, no. 1 (January 3, 2013): 135–68, https://doi.org/10.1146/annurev-psych-113011-143750.
[20] Philip David Zelazo, Clancy B Blair, and Michael T Willoughby, "Executive Function: Implications for Education. NCER 2017-2000," National Center for Education Research, 2016.
[21] Peter Facione, NC Facione, and CA Giancarlo, "California Critical Thinking Disposition Inventory: Inventory Manual," California Academic Press, Millbrae, CA. PA Facione and NC Facione. Talking Critical Thinking Change. Higher Learning 39, no. 2 (2001): 2007.
[22] Jorge Valenzuela, Ana Ma Nieto, and Carlos Saiz, "Critical Thinking Motivational Scale: A Contribution to the Study of Relationship between Critical Thinking and Motivation," Electronic Journal of Research in Education Psychology 9, no. 24 (November 22, 2017): 823–48. https://doi.org/10.25115/ejrep.v9i24.1475.
[23] Peter Facione, N Facione, SW Blohm, and C Giancarlo, "California Critical Thinking Skills Test: Test Manual—2002 Revised Edition," 2002.
[24] Peter Facione, "Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction [The Delphi Report]," 1990.
[25] Yuan Li, Kun Li, Wenqi Wei, Jianyu Dong, Canfei Wang, Ying Fu, Jiaxin Li, and Xin Peng, "Critical Thinking, Emotional Intelligence and Conflict Management Styles of Medical Students: A Cross-Sectional Study," Thinking Skills and Creativity 40 (June 2021): 100799, https://doi.org/10.1016/j.tsc.2021.100799.
[26] Christopher Paparone, "Two Faces of Critical Thinking for the Reflective Military Practitioner," Military Review 94, no. 6 (2014): 104–10.
[27] Henry A. Leonard, J Michael Polich, Jeffrey D Peterson, Ronald E Sortor, and S Craig Moore, "Something Old, Something New: Army Leader Development in a Dynamic Environment," RAND CORP

SANTA MONICA CA, 2006.
[28] Susan C Fischer, V Alan Spiker, and Sharon L Riedel. "Critical Thinking Training for Army Officers. Volume 2: A Model of Critical Thinking." ANACAPA SCIENCES INC SANTA BARBARA CA, 2009.
[29] Gary Klein, Michael McCloskey, Rebecca Pliske, and John Schmitt, "Decision Skills Training," Proceedings of the Human Factors and Ergonomics Society Annual Meeting 41, no. 1 (October 1997): 182–85. https://doi.org/10.1177/107118139704100142.
[30] Karel Van Den Bosch, Anne S Helsdingen, and Marlus M De Beer, "Training Critical Thinking for Tactical Command," TNO HUMAN FACTORS SOESTERBERG (NETHERLANDS), 2004.
[31] John W. Miller and Jennifer S. Tucker. "Addressing and Assessing Critical Thinking in Intercultural Contexts: Investigating the Distance Learning Outcomes of Military Leaders." International Journal of Intercultural Relations 48 (September 2015): 120–36. https://doi.org/10.1016/j.ijintrel.2015.07.002.
[32] Mark H. Wiggins and Larry Dubeck, "Fort Leavenworth Ethics Symposium: Exploring The Professional Military Ethic," Symposium Report. Fort Leavenworth, KS: CGSC Foundation Press, 2011.
[33] MK. Devine, "Professional Military Education for Navy Operational Leaders," NAVAL WAR COLL NEWPORT RI JOINT MILITARY OPERATIONS DEPT, 2010.
[34] Jacqueline Eaton and Han de Nijs, The 11th NATO Operations Research & Analysis Conference Proceedings (2. October 2017): https://www.sto.nato.int/publications/STO%20Meeting%20Proceedings/STO-MP-SAS-OCS-ORA-2017/MP-SAS-OCS-ORA-2017-00-0-Conference%20-%20Booklet.pdf.
[35] Yvonne R. Masakowski, NATO HFM RTG 286 Final Report: NATO Leader Development for NATO Multinational Military Operations (August 2022), NATO Science and Technology Organization (STO), Paris, France.
[36] Philip C. Abrami, Robert M. Bernard, Evgueni Borokhovski, Anne Wade, Michael A. Surkes, Rana Tamim, and Dai Zhang, "Instructional Interventions Affecting Critical Thinking Skills and Dispositions: A Stage 1 Meta-Analysis," Review of Educational Research 78, no. 4 (December 2008): 1102–34. https://doi.org/10.3102/0034654308326084.
[37] Jane S. Halonen, "Demystifying Critical Thinking," Teaching of Psychology 22, no. 1 (February 1995): 75–81, https://doi.org/10.1207/s15328023top2201_23.
[38] Deanna Kuhn, The Skills of Argument, 1st ed. Cambridge University Press, 1991, https://doi.org/10.1017/CBO9780511571350.
[39] Diane F. Halpern, "Teaching Critical Thinking for Transfer across Domains: Disposition, Skills, Structure Training, and Metacognitive Monitoring," American Psychologist 53, no. 4 (1998): 449–55. https://doi.org/10.1037/0003-066X.53.4.449.
[40] Kal Alston, "BEGGING THE QUESTION: IS CRITICAL THINKING BIASED?," Educational Theory 45, no. 2 (June 1995): 225–33, https://doi.org/10.1111/j.1741-5446.1995.00225.x.
[41] John E. McPeck, "Critical Thinking and Subject Specificity: A Reply to Ennis," Educational Researcher 19, no. 4 (May 1990): 10–12, https://doi.org/10.3102/0013189X019004010.
[42] Deanna Kuhn, "Critical Thinking as Discourse," Human Development 62, no. 3 (2019): 146–64, https://doi.org/10.1159/000500171; The participants were asked if they had their residency in North America or another continent. So the item was operationalized dichotomous.
[43] Mica R. Endsley, Robert Hoffman, David Kaber, and Emilie Roth, "Cognitive Engineering and Decision Making: An Overview and Future Course," Journal of Cognitive Engineering and Decision Making 1, no. 1 (March 2007): 1–21, https://doi.org/10.1177/155534340700100101.
[44] Raafat George Saadé, Danielle Morin, and Jennifer D.E. Thomas, "Critical Thinking in E-Learning Environments," Computers in Human Behavior 28, no. 5 (September 2012): 1608–17. https://doi.org/10.1016/j.chb.2012.03.025.
[45] Andy Field, Discovering Statistics Using IBM SPSS Statistics, 5th edition, Thousand Oaks, CA: SAGE Publications, 2017.
[46] Ou Lydia Liu, Lois Frankel, and Katrina Crotts Roohr, "Assessing Critical Thinking in Higher Education: Current State and Directions for Next-Generation Assessment: Assessing Critical Thinking in Higher Education," ETS Research Report Series 2014, no. 1 (June 2014): 1–23. https://doi.org/10.1002/ets2.12009.
[47] Yvonne R. Masakowski, Cognitive Bias and Decision-Making, NATO Innovation Hub, Norfolk, VA. March 07, 2022.
[48] Stephen J. Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," Carlisle, Pennsylvania: US Army War College 9 (2008).
[49] Kevin L. Flores, Gina S. Matkin, Mark E. Burbach, Courtney E. Quinn, and Heath Harding, "Deficient Critical Thinking Skills among College Graduates: Implications for Leadership," Educational Philosophy and Theory 44, no. 2 (January 2012): 212–30, https://doi.org/10.1111/j.1469-5812.2010.00672.x.
[50] Jean Piaget, The Origins of Intelligence in Children, Translated by Margaret Cook, New York: W W Norton & Co, 1952. https://doi.org/10.1037/11494-000.

06

FÜHRUNG 2021+

HARALD SCHAUB, SÖNKE MARAHRENS

- **Authoren:** Prof. Dr. Harald Schaub, apl. Professor an der Otto-Friedrich-Universität in Bamberg, Leiter der IABG Safety & Security Academy, Senior Program Manager Human Factors Engineering.

  Oberst i.G. Sönke Marahrens, Dipl Inform, MPA, Bereichsleiter Strategie und Streitkräfte.

  Die Autoren waren als SME und Co-Lead für das MCDC Projekt Future Leadership beteiligt. Bei den in diesem Artikel vertretenen Ansichten handelt es sich um die des Autors/der Autorin. Diese müssen nicht mit jenen des GIDS, der Bundeswehr und der IABG übereinstimmen

- **Abstract:** Das Projekt "Future Leadership"[1] war eine multinationale Initiative unter Führung des German Institute for Defense and Strategic Studies (GIDS) und dem Development, Concepts and Doctrine Centre (DCDC) in Shrievenham, UK, im Rahmen der Multinational Capability Development Campaign 2019/2020. Dabei wurde untersucht, wie sich die in verschiedenen multinationalen Zukunftspapieren geäußerten Beobachtungen und Zukunftsvisionen:

  - ständig zunehmende Komplexität des operativen Umfeldes;
  - Umgangs mit Big Data, künstlicher Intelligenz (KI/AI) und der damit verbundenen möglichen Autonomie von Maschinen, die zu Veränderungen der Mensch-Maschine Schnittstelle führt;
  - „Grauzonen", die beim fahrlässigen oder vorsätzlichen Unterlaufen der durch die UN-Charta rechtlich klar abgegrenzten Rechtszustände von Frieden und Krieg sowie aus der mit der zunehmenden Komplexität verbundenen höheren Volatilität, Unsicherheit und Ambiguität entstehen,

  auf die Anforderungen an militärische Führungskräfte auswirken werden.

- **Abstract:** The „Future Leadership" project was a multinational initiative led by the German Institute for Defense and Strategic Studies (GIDS) and the Development, Concepts and Doctrine Centre (DCDC) in Shrivenham, UK, as part of the Multinational Capability Development Campaign 2019/2020. It examined how the observations and visions of the future expressed in various multinational future papers relate to:

- the ever-increasing complexity of the operational environment;
- Dealing with big data, artificial intelligence (AI/AI), and the associated possible autonomy of machines, which leads to changes in the human-machine interface;
- „grey zones" arising from the negligent or deliberate undermining of the legal states of peace and war clearly defined by the UN Charter, as well as from the higher volatility, uncertainty, and ambiguity associated with increasing complexity,

will have an impact on the requirements for military personnel.

- **Problemdarstellung:** What are the impacts on military leadership, if the predictions as stated in various Future Operating Environment documents will come true?

- **Bottom-line-up-front:** Das Industriezeitalter und damit die dort gültigen Rahmenbedingungen für Führung, wie Stabilität des Umfelds, prozessbasierte Abläufe und Kontrolle müssen neu überdacht werden, da zunehmende Komplexität des Umfeldes Konsequenzen für das Führen nach sich ziehen. In diesem Zusammenhang muss sich folglich auch der Begriff des Denkens in den Streitkräften zu einer gleichermaßen kreativen wie auch kritischen Fähigkeit weiterentwickeln.

- **Was nun?** Mit dem auf das „Warum" ausgerichteten Ansatz der Auftragstaktik statt des deutlich einfacheren „Wie" Ansatzes der Befehlstaktik ist die Auftragstaktik der ideale Rahmen für die Nutzung der Methoden der Künstlichen Intelligenz zur Weiterentwicklung der Mensch-Maschine Schnittstellen. Dies bedarf aber auch, dass neue Formen des Vertrauens formuliert und ausgebildet werden.

Was Sie über KI im Einsatz wissen sollten, aber nie gefragt haben oder worüber Sie nachgedacht haben sollten, bevor Sie in einer komplexen Grauzonen-Operation führen.

Future Operating-Environment - Der Ansatz

Future-Operating-Environment Dokumente werden national und international mit wissenschaftlichen Methoden , wie beispielsweise der Szenario-Entwicklung oder der Trendanlyse, zur strategischen Vorausschau für die Streitkräfteplanung erarbeitet. Dabei werden, neben Erkenntnissen aus gesammelten Lessons Learned aus laufenden oder beendeten Einsätzen, auch externe gesellschaftliche und technologische Impulse für die (Weiter-) Entwicklung militärischer Fähigkeitsprofile berücksichtigt. Damit können bestehende militärische Fähigkeiten auf ihre zukünftige Relevanz überprüft und neue, bislang fehlende Fähigkeiten identifiziert werden.

Bei der Analyse der Future-Operating-Environment Dokumente der Projektnationen wurden mit Bezug zu Führungsaspekten / -fragen drei gemeinsame Trends (Komplexitätszuwachs, Umgang mit neuen Technologien und Grauzonen durch hybride Bedrohungen) erkannt, die dann weiter untersucht wurden. Hierzu wurden Wissenschaftler und Experten eingeladen, ihre aktuellen Forschungen in diesen Themenbereichen vorzustellen und mit dem Projektteam in moderierten Design Thinking Sessions[2] diskutiert. Interesseleitend war dabei stets die Frage, was das Angesprochene konkret für militärische Führungskräfte bedeutet.

Komplexität als Führungsherausforderung

Um grundsätzliche Ableitungen zur militärischen Führung im 21. Jahrhundert treffen zu können, gilt es vorab das Handlungsumfeld selbst zu beschreiben. In diesem Zusammenhang widmet sich „Future Leadership 2020" in einem ersten Schritt dem aktuellen Charakter von Konflikten. Diese sind durch einen sich beschleunigenden Wettbewerb zwischen staatlichen und nichtstaatlichen Akteuren und einem nicht erkennbaren Ende gewaltsamen Extremismus, der zu zunehmender Instabilität mit extremen Veränderungsgeschwindigkeiten führt, geprägt. Dies mündet in komplexen und üblen (auf Englisch: wicked) Problemstellungen, die mit herkömmlichen Methoden nicht mehr gelöst werden können. Diese veränderten Rahmenbedingungen können darüber hinaus auch durch ein durch Volatilität, Unsicherheit, Komplexität und Ambiguität[3] sich permanent wandelndes militärisches Einsatzumfeld entstehen. Diese veränderten Anforderungen führen dazu, dass selbst erfahrene Führungskräfte überfordert werden und feststellen, dass bewährte Problemlösungsstrategien nicht mehr ausreichend sind und erfordern personelle, organisatorische und technische Lösungsunterstützungen.

Dies Komplexitätsproblem wird durch gegnerische hybride Aktivitäten noch weiter verstärkt, bei denen die bisherige scharfe Trennung zwischen Frieden und Krieg aufgehoben ist, so dass militärische und zivile Führungskräfte in einem deutlich erweiterten Aufgabenspektrum sowohl miteinander als auch füreinander arbeiten können müssen. Big Data, das unter anderem aus einer ständig wachsenden Anzahl an Sensoren und Aufklärungsergebnissen entsteht, muss permanent analysiert und in Entscheidungen einbezogen werden. Hierzu werden zeitnah Technologien der künstlichen Intelligenz ihre Anwendung finden, die militärische Führungskräften in ihren Fähigkeiten unterstützen „eine komplexe Lage zu verstehen". Dies lässt sich nur mit (zukünftigen) Führungskräften realisieren, die im hohen Maße kognitiv agil und adaptiv sind.

Damit bleibt die Frage was unter Führung im Allgemeinen, und vor allem unter militärischer Führung, tatsächlich zu verstehen ist.

Leadership, Command und Management

Hierzu wird Führung in Leadership, Command und Management aufgeteilt. Leadership ist der motivatorische Anteil im Sinne eines „Folge mir", Command der funktionale Anteil im Sinne eines „Lasst uns voran gehen" und Management die dazu notwendigen Prozesse und Verfahren.

Während Command kraft Amtes verliehen wird, basiert Leadership zu einem hohen Maße auf psychologischen Eigenschaften der Führungskraft und ihrer Beziehung zu den Geführten, und dabei vor allem auf Vertrauen. Bisher „gültige" Narrative eines „Heroic Leaders", die insbesondere durch literarische „Sieger" - Darstellungen häufig überzeichnet wurden, eignen sich nicht für die Lösungen komplexer Probleme. Hier müssen neue Bilder gesetzt werden, beispielsweise jenes des militärischen Führers als Gärtner, welches General McChrystal in seinem Buch „Teams of Teams" zeichnete. Im Sinne der Auftragserfüllung spielt heute bei „guter" Führung gerade in westlichen Demokratien neben dem Effizienzkriterium auch die moralisch angemessene Auftragserfüllung eine besondere Rolle. Des Weiteren komprimieren aktuelle und erwartbare moderne Informationstechnologien durch die permanente Echtzeitkommunikation die bisherigen, auch organisatorisch getrennten, Stufen der strategischen, operativen und taktischen Ebene zumindest virtuell auf eine einzige Ebene, was in ihrer positiven Ausgestaltung eine Beschleunigung, in einer negativen Ausgestaltung Vertrauen zerstörendes Micro-Management bedeuten kann. Dem kann mit einer entsprechenden Organisationsphilosophie entgegengewirkt werden, die im Militärischen mit der deutschen Auftragstaktik vorliegt. Die Philosophie der Auftragstaktik und die unterliegenden Grundsätze wie Vertrauen, Ermächtigung Unterstellter, pro-aktives Ver-

halten, kritisches Denken, der Wille Autorität und Entscheidungsbefugnisse zu delegieren sowie die Bereitschaft die Initiative zu ergreifen zeigen deren uneingeschränkte Anwendbarkeit für aktuelle und kommende „VUCA-Herausforderungen", da mit ihr als von unten nach oben aufwachsender Führungsphilosophie Probleme tatsächlich dort gelöst werden, wo sie auftreten. Darüber hinaus bietet sie auch effektive Möglichkeiten zum Umgang mit modernen KI basierten Technologien.

LEADING IN THE FUTURE ENVIRONMENT

Die bisher geltenden Paradigmen des Industriezeitalter und damit die dort gültigen Rahmenbedingungen für Führung, wie Stabilität des Umfelds, prozessbasierte Abläufe und Kontrolle müssen für das Future Environment überdacht werden, da zunehmende Komplexität des Umfeldes Konsequenzen für das Führen nach sich zieht. In diesem Zusammenhang muss sich folglich auch der Begriff des Denkens in den Streitkräften zu einer gleichermaßen kreativen wie auch kritischen Fähigkeit weiterentwickeln. Im Kontext der Eigenschaften von Big Data (Umfang, Korrektheit und Umsetzungsgeschwindigkeit) wird das Thema der Künstliche Intelligenz als neuer führungsrelevanter kognitiver Mensch-Maschine Schnittstelle zwangsläufig thematisiert. Wo Datenvolumen Menschen an ihre Leistungsgrenzen bringen, müssen Prozesse im Sinne der Digitatlisierung, Autonomisierung und Automatisierung zumindest unterstützt werden, um den Anforderungen des Gefechtsfeldes gerecht werden zu können. In diesem Zusammenhang gilt es auch, gruppendynamische Prozesse und intrapersonnelle Aspekte und Anforderunge des Führen in komplexen Szenarien zu beschreiben, um holistische Ableitungen treffen zu können. Hierzu werden unter anderem Führungsstile, Persönlichkeitsmerkmale und Herausforderungen wie Stress und Resilienz dargestellt. Damit jedoch noch nicht genug mit den Anforderungen an den militärischen Führer. Die Bewältigung von Komplexität erfordert ein Mindestmass an notwendiger gedanklicher Agilität und Adaptivität, sowohl in der individuellen als auch organisatorischen Perspektive, um die militärischen Herausforderungen im hybriden oder subthreshold Umfeld bewältigen zu können. Dabei sind die besondere Relevanz der Charakteristika von Auftragstaktik gerade in der Bewältigung von cross domain Problemen hervorgehoben.

KI im Kontext der Führung

Künstliche Intelligenz vermag den limitierenden Faktor „Mensch" in vielerlei Hinsicht zu unterstützen oder gar zu entlasten. Dies führt zwangsläufig zur Frage der Nutzung autonomer Systeme, deren Möglichkeiten und den entsprechenden ethischen Herausforderungen. Hierzu wurden unter anderem im Rahmen der NATO Ansätze wie meaningful und

effective humand control diskutiert. Da potenzielle Gegner diesen auf westlichen Moral und Ethikvorstellungen beruhenden Überlegungen nicht unbedingt folgen werden, kann eine unterschiedliche Nutzung von KI zu weiteren Asymmetrien führen, die sich gegebenenfalls auch als echte militärische Nachteile erweisen können.

Im Bereich der Entscheidungsunterstützung werden die mit dem Einsatz von KI verbundenen Risiken hinsichtlich Vertrauen, Abhängigkeit sowie möglicher Barrieren zwischen Führern und Geführten offensichtlich. Auch das Risiko, dass zukünftige Führungskräfte nicht mehr den Raum erhalten, aus eigenen Fehlern zu lernen, da diese sofort von KI kompensiert werden, wird sich möglichweise negativ auswirken. Unter der Annahme, dass die Auftragstaktik auch auf die Autonomie der Systeme erweitert werden kann, ergibt sich der Bedarf einer organisatorischen Führungskultur, die verbindlich „human control" definiert und dieses auch umsetzt. Mit dem Konzept der „Effective Human Control" können Risiken wie „Unterausnutzung", „zu großes Vertrauen" oder „humane Substitutionsmöglichkeiten" diskutiert werden. Desweitern muss abschließend geklärt sein, wie die operative Nutzungsautorität geregelt wird, um ein fremdgesteuertes externes „technisches" Micro-Management in einem „System of System" zu verhindern.

Von der Theorie zur Praxis – mögliche Ableitungen für die Bundeswehr

1813 schrieb Carl von Clausewitz in seinem Nachruf über General von Scharnhorst folgendes, mit denen er dessen Werk der Preußischen Heeresreformen[4] zusammenfasste:

„1. Eine der neuen Kriegsart entsprechenden Eintheilung, Bewaffnung und Ausrüstung.
2. Veredelung der Bestandteile und Erhebung des Geistes.
3. Eine sorgfältige Auswahl derjenigen Offiziere, welche an die Spitze der größeren Abteilungen gestellt wurden.
4. Neue der heutigen Kriegsart angemessenen Übungen"

Sieht man es pragmatisch, sind diese vier Ableitungen auch mit Bezug auf die mit Future Leadership 2021 beschriebenen Herausforderungen generell nutzbar und ließen sich wie folgt umsetzen:

1. Flachere Hierarchien, kleinere, aber agilere und adaptiverer Verbände, Bewaffnung mit modernen, auch autonomen Waffensystemen und KI-Unterstützung. Falls dies ethisch nicht gewünscht wird, muss zumindest sichergestellt werden, dass entsprechende Counter Systeme verfügbar sind.

2. Ausbildung der Führungskräfte in den Bereichen Adaptivität, kritisches und kreatives Denken sowie Anwendungen Künstlicher Intelligenz auch im Rahmen komplexer Gefechtsaufgaben.
3. Überprüfen des Kompetenzmodells der Bundeswehr hinsichtlich dessen Validität bezüglich Adaptivität, Umgang mit komplexen Fragestellungen, Agilität beispielsweise der Kompetenz bestehendes Wissen zugunsten neuer Entwicklungen in Fragestellen zu können[5].
4. Bestehende Übungen müssen über den Anteil der Zertifizierungen für bestimmte Operationen oder Einsätze, also „Könnungen", zukünftig auch wieder freilaufende Anteile haben, die die dabei eingesetzten Führungskräfte der Volatilität, Unsicherheit, Komplexität und Ambiguität aussetzen, mit dem Ziel, dass sowohl Übungsanlegende als auch Teilnehmer dabei „lernen": „Wer am natürlichsten, ruhigsten manöverierte, den Sinn der General-Idee am schnellsten auffaßte, die einmal gegebene Disposition am consequentesten durchführte, das Glück zu benutzen, das Unglück auszugleichen wußte, verdient vorzugsweise Beifall."[6]

Basierend auf den Erkenntnissen aus dem Projekt Future Leadership 2020 lassen sich aus Sicht der Autoren noch weitere Empfehlungen ableiten:

> *Agilere und adaptivere SK bedeuten grundsätzlich flachere Hierarchien mit einem höheren Vernetzungsgrad*

Die bestehenden Streitkräftestrukturen (und damit die Art wie darüber gedacht wird) sind in Teilen älter als 130 Jahre. Die russische Armee experimentiert seit mehreren Jahren mit sogenannten Bataillon Task Groups, bei denen entsprechend der zu bewältigenden Aufgabe beispielsweise Drohnen-, Eloka-, oder Artillerie-Züge einem Bataillon zugewiesen und von dort geführt werden. In den bisherigen Auslandseinsätzen der Bundeswehr wurden solche Verbände ebenfalls eingesetzt, in den Strukturen im Inland finden sie sich nirgends wieder. Agil und adaptiv bedeutet dabei nicht automatisch auch kleiner, es ermöglicht aber aus der Bewegung heraus, neue und alternative Formen aufgabenorientiert einzunehmen. Dies gilt es auch auszubilden, um die damit befassten Führungskräfte dazu tatsächlich zu befähigen.

Der derzeitige öffentliche Diskurs um die zukünftigen Strukturen der Bundeswehr[7] zeigt, dass in Deutschland derzeit noch nicht in neuen agileren oder adaptiveren Strukturen gedacht wird. Im Gegenteil, es werden meist nur Stäbe, Einheiten und Fähigkeiten entlang bestehender gedanklicher Korsettstangen, wie strategischer, operativer[8] und taktischer Ebene hin- und her geschoben.

Letztendlich steht und fällt aber alles damit:

> *(Zunehmende) Komplexität im Entscheidungsumfeld muss zunächst auch komplex erfasst und komplex gedacht werden, erst in der Umsetzung gilt es, die Komplexitäten aufzulösen.*

Die existierenden Verfahren zur Auftragsauswertung spiegeln nicht die tatsächliche Komplexität der Herausforderungen in der Welt. Das bedeutet nicht, dass sie in sich falsch sind, sie führen aber bei der Anwendung zu nicht angemessenen, unterkomplexen Lösungen, die am Anfang zwar eingängig, in der Folge aber gegebenenfalls zu mehr Schaden als Wirkung führen, da sie Systemzusammenhänge nicht berücksichtigen und zu falschen Zielsetzungen, unvernetzter Situationsanalyse, einseitiger Schwerpunktbildung, unbeachtet lassen von Neben- und Fernwirkungen, sowie Tendenzen zur Übersteuerung und autoritärem Verhalten aufweisen.[9]

Methodengerecht angesetzt, ließen sich aus Sicht der Autoren viele der bestehenden Probleme, unter anderem auch im Rüstungsbereich, vielleicht nicht sofort auflösen, aber mindestens mit einer höheren Effizienz und vor allem einer besseren Effektivität moderieren. Dies gilt auch für die zukünftige Gefechtsführung im Rahmen von Multi-domain Operations (MDO). Einer der wissenschaftlichen Väter dieser neuen Operationsform, Alberts, erklärte während der Konferenz des NATO C2 Centre of Excellence zu MDO im November 2020, dass MDO nur mit MDO gekontert werden können. Dies verlangt dann aber, dass zukünftig alle militärischen Führer in allen Domänen (Luft, Land, See, Space und Cyber, prospektiv erweitert um eine Human Domain) die damit verbundene sich steigernde Komplexität verstehen und problemgerecht umsetzen können müssen.

> *(Mehr) Auftragstaktik wagen – jeder Auftragstaktiker führt mit Auftrag, aber nicht jeder Führer mit Auftrag ist ein Auftragstaktiker.*

Auftragstaktik und das bis dato insbesondere im deutschen Heer bevorzugte Führen mit Auftrag sind nicht dasselbe. Das lässt sich historisch: Mit dem Exerzier-Reglement der Preußischen Infanterie von 1888 wurde ein „Auftragsverfahren" erstmalig in einer Vorschrift postuliert. Der Begriff „Auftragstaktik" wurde erst danach von einem Kritiker des Auftragsverfahren, Generalleutnants a.D. Albert von Boguslawski, geprägt, der in einem Aufsatz unter anderem fürchtete, dass die (damals gerade neu eingeführten) Brigadekommandeure durch diese neue Art der Führung weniger Freiheit des Handels als die ihr unterstellten Führer haben würden.[10] Dieses auf die Führungspersönlichkeit bezogene Denken führte zum „Führen mit Auftrag", während Moltke d.A. selbst immer vom Untergebenen

ausgegangen ist: „Als Regel ist festzuhalten, dass die Disposition alles das, aber auch nur das enthalten muß, was der Untergebene zur Erreichung eines bestimmten Zweckes nicht selbständig bestimmen kann."[11]

Bei Übungen sind VUCA Elemente derart einzubinden, dass für deren Lösungen Vorgesetzte und Untergebene konkret kollaborieren müssen. Desweiteren müssen auch Lagen eingespielt werden, die Führungskräfte zu Entscheidungen unter moralischen und ethischen Aspekten zwingen. Mit dem auf das „Warum" ausgerichteten Ansatz der Auftragstaktik statt des deutlich einfacheren „Wie" Ansatzes der Befehlstaktik ist die Auftragstaktik der ideale Rahmen für die Nutzung der Methoden der Künstlichen Intelligenz zur Weiterentwicklung der Mensch-Maschine Schnittstellen. Dies bedarf aber auch, dass neue Formen des Vertrauens[12] formuliert und ausgebildet werden.

Damit muss das bisherige „Führen mit Auftrag" als ganzheitlicher Auftragstaktik noch stärker als bisher mit dem Menschenbild der Inneren Führung verbunden werden, und die vertrauensbasierte Wechselbeziehung zwischen Führungskräften und Untergebenen noch stärker betont. Dies muss gegebenenfalls entsprechend ausgebildet werden. das Bild der „bislang" allwissenden Führungskraft kommt durch die steigenden Komplexität notwendigerweise an ihre kognitiven Grenzen, Komplexitätsbeherrschung durch mehr Kreativität ist nur durch mehr Diversität in Teams erreichbar. Bei der Auswahl von Führungskräften müssen damit dann auch 360 Grad Beurteilungen mit einbezogen werden.

Endnotes

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/946243/20201210-MCDC_Future_Leadership-web.pdf, eine deutsche Übersetzung befindet sich zum Zeitpunkt der Erstellung dieses Kommentars in Erarbeitung und wird nach Fertigstellung über die Homepage des GIDS[1] abrufbar sein.
[2] Design Thinking beschreibt Methoden zur Lösung komplexer oder chaotischer Probleme, bei der Experten und „Betroffene" gleichermaßen Berücksichtigung finden, um verschiedene Perspektiven / Perspektivwechsel zu ermöglichen.
[3] Im Englischen VUCA – Volatility, Uncertainty, Complexity and Ambiguity.
[4] Werner Hahlweg, Carl von Clausewitz. Schriften. Aufsätze. Briefe (Berlin: Vandenhoeck&Ruprecht, 1990), 212 – 213.
[5] Die Bedeutung dieser Kompetenz lässt sich im derzeitigen Umgang mit Covid 19 hervorheben, bei der viele Bundesbürger nach einem „Festhaltehaltepunkt" suchen, während die forschenden Wissenschaftler permanent, teilweise auch diametrale, Erkenntnisse durch neue Studien gewinnen und publizieren.
[6] Georg von Reisswitz, Kriegsspiel (Berlin, 1824), 6.
[7] Hans-Peter Bartels und Rainer Glatz, " Welche Reform die Bundeswehr heute braucht – Ein Denkanstoß," SWP, 2020, https://www.swp-berlin.org/10.18449/2020A84/. Siehe ebenso Dominic Vogel, „Wie die Führungsorganisation der Bundeswehr angepasst werden kann," SWP, 2020, https://www.swp-berlin.org/10.18449/2020A25/.
[8] Die Clausewitz z.B. gar nicht kannte.
[9] Gilbert Probst und Peter Gomez, Vernetztes Denken. Ganzheitliches Führen in der Praxis (Wiesbaden: Springer, 1987).

[10] Stephan Leistenscheider, Auftragstaktik im preußisch-deutschen Heer 1872 bis 1914 (Hamburg, Berlin, Bonn:
Mittler, 2002).
[11] Carl-Gero von Ilsemann, „Das operative Denken des älteren Moltke." In Operatives Denken und Handeln in deutschen Streitkräften im 19. und 20. Jahrhundert (= Vorträge zur Militärgeschichte Band 9), ed. MGFA (Herford, 1988), 17-44.
[12] Die empirische Forschung im Bereich Autonome Maschinen zeigt, dass eine Maschine um den Faktor 10 „sicherer" agieren muss, als ein Mensch, damit ihr von Menschen „vertraut" wird.

07

LEADERSHIP OF THE NEW MILITARY GENERATIONS. PREMISES AND PREDICTIONS

GABRIELA-FLORINA NICOARA, VLAD-ANDREI COSTACHE

- **Author:** Major Gabriela-Florina Nicoara, Senior instructor, Ph.D. candidate, Command and Staff Faculty, "Carol I" National Defense University; Research interests: defense resources, management, human capital, leadership, logistics; Earlier publication: Considerations Regarding the Integrated Approach to Defense Resources Management - article published in Romanian Military Thinking no.1/2022; Academic fields: logistics, management, infrastructures.

  Student Vlad-Andrei COSTACHE – Military Student, 1st year, Command and Staff Faculty, "Carol I" National Defense University; Research interests: military history, leadership, logistics, military strategy; Academic fields: logistics. The views contained in this article are the authors' alone and do not represent the views of "Carol I" National Defense University.

- **Abstract:** The military domain provides rich literature and technology on war and underlines the importance of technology in helping militaries win wars. Academics have sought to analyze the connection between human capital and technology and how those two depend on each other. Moreover, history shows that a great leader was always followed by its troops not only because of his proven qualities but also for his way of leading. Nowadays, leaders face a variety of challenges. First, they have to understand and manage the contemporary operational environment characterized by volatility, uncertainty, complexity, and ambiguity (VUCA). Secondly, they should accept that technology is a key driver of change and integrate it in a positive manner in the troop's activities. Moreover, leaders should manage the transition between the old and the new generation of human resources within military organizations.

- **Problem statement:** How to understand contemporary challenges' impact on modern military leadership?

- **Bottom-line-up-front:** TIn addressing the aforementioned issues, this article explores the challenges of the VUCA environment and the impact of technology on Generation Z to identify organizational methods or managerial instruments to recruit, educate and shape the new generation of military leaders.

- **So what?** Leading troops or managing personnel represent mandatory conditions for the Military organization. Without a tailored leading approach, all the organizational objectives will experience difficulties achieving them. It is time for academics and practitioners to work together and find suitable approaches for leading the military structures..

VUCA and Generation Z

A lot of literature has discussed leadership within different organizations. There are various arguments to support this interest in leading: efficiency depends on leaders, personnel retention, and management of resources. Besides leadership, the need to describe a new state of environment brought up a concept known as "VUCA" (Volatility, Uncertainty, Complexity, and Amgibuity). Nowadays, Volatility, Uncertainty, Complexity and Ambiguity are constant lenses used in different approaches, such as in economics, society, and in the military. Also, updated changes influenced by technology development made Generation Z a highly addressed topic. This article investigates the requirements of leadership in the Romanian military organization. The research focuses on two significant variables that significantly impact the military: the new human resource represented by Generation Z and the VUCA environment's influences.

The process of adapting leadership within the military organization addresses all inner components. Not only finance, logistics, or planning but also human resources, Civil-Military Cooperation (CIMIC), and communication should be involved in finding capable solutions. Some departments have indeed limited responsibilities in meeting the requirements, while others are deeply involved. However, one may focus on the Human Resources (HR) component because it plays a significant role in leadership development. Regarding leadership, the HR department has responsibilities such as:

- Identifying the key leader positions;
- Drawing the necessary competence for leaders;
- Establishing the subordinated structures and their responsibilities;
- Giving the career path guidance; and
- Establishing the required studies for a leader in accordance with the level of responsibilities.

Military HR is responsible for sharing common regulations in the military field. The general framework focus on guiding military behaviour is another HR's attribute. On the one hand, HR gives guidance to the education department. On the other hand, it is directly responsible for the professional path of military personnel. HR provides not only requirements for different positions but also guidance regarding the necessary studies or professional experience.

Therefore, the HR component is in a significant position of responsibility to balance the military organization's requirements and human resources potential.

A Volatile Strategic Environment

Romania has been a NATO member since 2014, and nowadays, it has a great responsibility to provide stability at the eastern borders of the alliance. Moreover, the ongoing war between Russian Federation and Ukraine and the crises caused by the pandemic significantly influences the military organizational environment. In addition, the numerous global conflicts and the decreasing resources endorse the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) within the military organization. In addition, the military conflicts happening in different regions of the world, the transformations caused by the climate changes, and the great powers' intention to expand their influence on others contribute to the decline of the resources. Not only the unreasonable consumption of resources but the inadequate behavior with respect to nature also greatly impacted the amount of resources. This presents a need for empirical research to find the direction for future military leadership.

The VUCA Environment – A Different Framework for Military Personnel and Leaders

The VUCA[1] environment can be understood from a large variety of perspectives. The approach we want to share is focused on the influences of VUCA on the military organization routine and its components. The military organization is legitimized as a hierarchy, and the entire activity is based on a consistent chain of command. Moreover, research showed that the hierarchy is an appreciated organizational value, and the employees considered it required for the military organization of tomorrow.[2] It is not only a requirement according to International Law but also a prerequisite to be recognized as military. With respect to this, what should the organization do to provide leaders defined by proactive behaviour capable of running contemporary troops?

VUCA is an acronym used, amongst other fields, in all organizational sectors characterized by changes.[3] Understanding the VUCA of the military organization is mandatory because every member can be affected by the measures taken to re-establish the balance. Regarding the meaning of VUCA, a sum of requirements for military organizations and HR components have to be identified. Generally speaking, volatility refers to unpredictable and frequent changes on a large scale[4], and the features of volatility represent demands for the military organization:

Features of the Volatility State	Requirements for Military Organization	Volatility Transposed from a State to Requirements of HRM
▶ instability	▶ predictability	▶ new type of solutions for recruit personnel
▶ challenges with unknown duration[6]	▶ capacity to adapt / to fight different periods	▶ solutions to replace rapidly the personnel on duty
▶ challenges with unknown duration[7]	▶ capacity to adapt / to fight different periods	▶ solutions to replace rapidly the personnel on duty
▶ consequences for a wide area	▶ holistic approach	▶ find personnel with compatible expertise in other organization

Table 1. Volatility refers to unpredictable and frequent changes on a large scale, and the features of volatility represent demands for the military organization.

This state brings a limited capacity of prediction regarding the number of personnel. There will be unpredictable situations described by the unknown duration that will need personnel. For example, a military conflict could require just a division or could ask for an entire Army. On the other hand, the expertise of the required personnel will be another issue. Using specialists from outside the military could be an alternative solution.

Uncertainty is related to the limitedness of information. The presence of technology in our daily routine and the fact that we can establish connections and communicate easier increase the exchange of information. The flows are considerable, and the shared content has another meaning. A piece of information shared between soldiers using different means can be understood or used in various ways. Some of the soldiers can be submissive to authority, but others may not. This enormous amount of information also brings self-doubt and uncertainty to military personnel.

In the past, we had limited resources and needed considerable time to become well-informed. Nowadays, information represents not only power, knowledge, and influence but also threats, manipulation, uncertainty, and insecurity. The military organization is not prepared to manage all the contemporary information, anticipate what will happen in the immediate future, and find a suitable way to act or respond. Their capabilities were designed (in all the domains: human resources, technical, etc.) to match requirements connected with the past military organizational environment. In this new context regarding the uncertainty, we identify a sum of demands for the military organization and HR component:

Features of the uncertainty state	Requirements for military organization	Uncertainty transposed from a state to requirements of HRM
▶ the limitedness of information	▶ ability to analyze and query ▶ rapid reaction	▶ share verified information regarding professional path
▶ the challenges have unknown duration	▶ a well-secured digital infrastructure	▶ use secured infrastructure to share information about careers opportunities
▶ unpredictability	▶ be prepared to choose from different courses of action	▶ prepare alternatives for key leading positions
▶ new events / threats	▶ capacity to react	▶ identify specialized personnel

Table 2. Regarding uncertainty, a sum of demands for the military organization and HR component were defined

This state represents a real challenge for leaders because they cannot use past events in the decision-making process. In this context, the military organization has to help leaders by providing them with the necessary support. On the one hand, it must find the mechanisms to properly manage all the information flows. Moreover, it has to protect its militaries from misinformation by analizing and filtering the sources. On the other hand, a well-secured internal communication infrastructure for sharing essential information about personnel is vital for a healthy HR system.

Complexity is connected with the multiple causes and factors involved in a problem. The organizational environment of the military we knew before had limited types of threats. For example, the armed conflict has been transforming a lot in the recent past because of information technology.[6] More and more unpredictable events and new threats appear. In the past, not only the soldier but also his leader knew which were the threats and the required procedures. Nowadays, the environment has become a real puzzle with multiple unknown pieces. The amount of information, the increasing requirements, and the lack of established procedures or solutions bring about confusion and indecision. Even if the means of communication, artificial intelligence, or databases already have a meaning in the military, the pressure of the VUCA environment is being felt not only by the leaders but also by the soldiers. In addition, the new type of human resources, which is characterized by a different spectrum of features than the previous one, also represents a challenge for the military. At the same time, the career path became difficult to predict. Nowadays, an officer does not know what to do to become capable of leading the troops. Leaders today

are confused about which competencies are required of them. In addition, the new type of human resources characterized by a different spectrum of features than the previous represents a challenge for the military.

In the past, a leader could review previous organizational experiences and identify solutions for his challenges by comparing his problem with an old identified one. Nowadays, the reality is different. In addressing a solution, man has to take into account a large spectrum of information and be ready to immediately change his decision because of the potential of the change that has just occurred.

Features of the Complexity State	Requirements for Military Organization	Complexity Transposed from a State to Requirements of HRM
▶ confusion	▶ filters	▶ solutions for categorize the information
▶ difficulties in analyzing the environment	▶ tools for identifying the relevant content and the useful information	▶ educate and form HR specialist
▶ needs a different approach to interrogating problems	▶ initiate research focus on finding suitable approaches	▶ use the results of research in developing HM management

Table 3. Commanders must consider a large spectrum of information and be ready to immediately change their decision

In this context, HR should find solutions based on the research. The HR component has to consider specializing personnel to support the soldiers throughout their careers, giving the right direction brings suitable competencies and produces leaders.

Ambiguity is defined as the lack of clarity about the meaning of an event.[7] To develop a course of action, it is imperative to know who, what, where, how, and why. The decision-making process also regards all that information and brings multiple decision points. Knowing just a part of the answers will significantly affect the end state and the entire process. Moreover, the decision-making process can be paralyzed because of the lack of certain information, and future plans, projects, or objectives could be jeopardized.

Features of the Ambiguity State	Requirements for Military Organization	Ambiguity Transposed from a State to Requirements of HR
▶ unclear relations between personal	▶ search and develop a mechanism for providing certainty	▶ guide the professional relationships to void becoming unclear interactions
▶ frustration	▶ help the personnel to understand what is happening within a military organization	▶ support the personnel in order to be able to develop performant career paths

Table 5. Knowing just a part of the answers will significantly affect the end state and the entire process.

In addition, technology has a special meaning in a VUCA military organizational environment. Daily professional routine depends on the devices, and the amount of information cannot be managed without them. Technology can be considered not only a positive asset but also a challenging one. The potential disruptions in technological dependency can prove disastrous in light of new trends.

According to this analysis, we draw a few conclusions:

- Because of VUCA influences, the military organization must implement multiple changes. Moreover, the initiatives may be needed in various areas, and different domains may also be covered. In this idea, a leader should have knowledge and competencies in multiple domains. Therefore, the leader should be the architect of change. Leaders must know how to motivate human resources to determine proactive behaviours.
- The environment is a giant consumer, and the resources are decreasing. Not only the logistical resources are hardly accessible, but also the available time is limited. The military leader should take into account not only the general framework but also the details of the problems. Defence resource management should also have an integrated approach.
- Military personnel is used to working with standing procedures, but the features of the new environment require changing past experience.
- The ongoing changes affect all the members of the organization, and the leader should know how to give support where needed.
- The limitedness of information imposes great analytical and synthetic restrictions over military capacities. Leaders should know how to guide their subordinates and help them to identify relevant information.
- Leaders should focus on enabling teams to deal sustainably with the changes. They are not able to do anything by themselves.

- The VUCA asks for action: change should be seen as a continuous planning process. The military organization has to find what is needed, choose a course of action, observe the effects, identify what is working and implement it.

What we know for sure about the VUCA effect within a military organization is that change will happen steadily, and the military organization will have to find mechanisms to compensate for these changes. We know that the military has a strong chain of command. We also know that the organizational culture is persistent and solid. Moreover, technology is a constant presence. With respect to these, the military must find tools to balance the military organizational environment.

The Transition Between Generations

Karl Mannheim, a Hungarian sociologist, was the first to highlight the importance of the generations. He defined the generation as a group of people connected in time and space. The members behave similarly and give a common significant to the experience they had.[8] The main reason we are interested in generations is that each of them has specific features. Generations are clearly identifiable from different values, particularly learning styles, and effective leadership principal to behave and approach professional responsibilities. The military organization has many reasons to be interested in the new generation. As literature has shown, both society and researchers are giving a lot of attention to Generation Z. It is significantly different from their predecessors.[9] To find out the differences between the last two generations, we will compare Generation Z with the Millennials. This resemblance is significant for our research: it will provide helpful ideas to build managerial solutions.

The aforementioned characteristics were found using two methods. First of all, we did analytical research using a sum of articles about both generations. Secondly, direct observation led to a sum of features. The identified features highlighted that there are significant differences between generations. Each of them has both positive and negative aspects.

Analyzing the features, one may consider that there is a sum of weaknesses of Generation Z that should be carefully managed. This new human resource has a short attention span, needs a lot of explanations, and prefers to be appreciated for their individual work.

On the other side, members of Generation Z are digital natives and considered innovative thinkers. One can say that they are prepared for the next technological level. They will proficiently operate the technology on the horizon, including augmented reality

headsets, drones, and autonomous cars. Moreover, this generation grew up in a world dominated by uncertainty, and was already initiated into behaving in accordance with the new requirements. This generation seems to be more intellectually prepared for danger and uncertainty.

Needs, Requirements, and Perspectives

Even if Generation Z has already joined the military and has a different position, including leading spots at the tactical level, it is premature to conclude the way they have adapted themselves to it. Moreover, it is time for Military organization to define new development directions. It has to set up the field for the new generation of human resources.

The Military should clearly create a mechanism orientated to absorb the differences between generations. Moreover, the potential of "digital natives" should be capitalized properly. It has to be taken into account that we will have a mixture of generations in the military for the next years. The contemporary leaders are members of the Millennials, and the junior Military employees were born after 1996. The transition should be done smoothly and based on the old organizational cultural values.

There is a shifting demographic within the military towards the newest generation of the armed forces. In this context, a military organization should adapt and meet the hurdles posed by this demographic shift. The end state for the military is to understand the requirements of the new human resources and use them as an advantage to ensure the organisational missions.

The punitive leadership style is no longer effective. Members of Generation Z need explanations and guidance, not only simple commands.[10] At the same time, it is difficult to change the behaviour of a mature leader and reconstruct his values and principles.

The new generation views leadership horizontally as opposed to the traditional vertical hierarchy the military has. This can be both a blessing and a curse for them, as the fact that they can accept command from people of the same rank will make them better subordinates and leaders. They will be able to accept counseling and advice from people who are not their direct commanders, thus taking more objective decisions and exercising a better command act across their troops. On the other hand, they could have difficulty accepting the commands without getting explanations. Nevertheless, we must consider that there are moments when time is not friendly, and decisions should be taken fast.

Another contributing factor to future commanders' education will be their tendency to prefer working alone, which contradicts the principle of esprit de corps. However, they may compensate for this with their multi-tasking abilities. The military organization is, more or less, a Janus with two faces: in times of war, authentic leadership is an indispensable requirement to achieve success, while in peace, the officers occupy their time with more administration and bureaucracy, especially as military units have reduced active personnel, sometimes lower than 50% operational employment which means that the same officer may hold several attributes at the same time.

All in all, we draw a few conclusions based on the results of this research. We consider these ideas' start points for future changes:

- Communicating values and cultural, organizational expressions as a springboard to the future. When joining the military, most recruits will have limited knowledge about the organization.
- Adapting is not just about changing the system; it is also about building on top of a solid foundation. The cultural organization is a critical foundation and can be used to grow new generations of leaders.
- Sustain a solid social contract between the military and the military. Nowadays, military personnel decides to quit the armed forces for civilian life, which is often better paid and well appreciated. As we remarked, Z Generation would not be loyal if the organization did not help them feel valued for their actions.
- Create and implement mentoring programs to support military personnel. The functions of mentoring can be approached from a different point of view. For example, role-model could help provide desired leadership behavior. Moreover, using e-mentoring can be attractive to Z Generation. The mentoring function of supporting the career helps inform the personnel correctly and reinforces the social contract between the military and its soldiers.

Typical Millennials Features	**Typical Z Generation Features**
General Aspects	
▶ born between 1985 - 1995	▶ born from 1996 to present
▶ grow up with digital TV and start to use/play on computers around 10;	▶ digital natives (they grow up with computers, smartphones, and the internet)
▶ as teenagers, they used primitive social networks, and the time spent on internet was limited;	▶ they have access all the time to social networks/many friendships are established by using them; ▶ access to the internet is not a privilege;

▶ they use libraries to document a project	▶ the internet is a common information resource
▶ their social life was based on face-to-face interactions	▶ social networks are the main tools used for interactions;
▶ growing up in an age of absentee parents[11]	▶ parents are present, but the connection between them and their child is disturbed by the technology
▶ they were born in communism, and they were educated using values and principles from this regime	▶ they were born in a democratic regime, and the values and principles were connected with this system of government
▶ they had the chance to explore society using common sense	▶ the use internet for almost all activities and interaction
▶ they were educated to have patience	▶ technology significantly influences the education; the reality shows us that the ability to focus on something decreases significantly
▶ they were trained to accept a Zero defect mentality[12] [any mistake is unacceptable and punished severely]	▶ they are encouraged to be creative and to adopt new plans for dealing with a particular problem or for achieving a purpose; ▶ they believe that a mistake becomes an opportunity to learn

Behavior in the Military Workplace

▶ they believe that fulfilling the tasks is a professional obligation	▶ seem to react better to rewards than to restrictions
▶ they do not depend on technology; they were learned to fulfil their task even if the technology was missing	▶ they depend on technology; they cannot imagine their lives without devices
▶ they were trained to work in teams	▶ they prefer working alone
▶ they prefer to solve a single task at a certain moment	▶ they are multi-tasking
▶ they can stay focused for an extended period	▶ they have a short attention span
▶ they accept commands easily	▶ they want to know why they have to do something
▶ they are team players, and they work collectively	▶ they are competitive[13] [they want to be judged on their own merits]
▶ they are familiar with technology	▶ they are technologically competent
▶ they rarely think outside the box	▶ they seem to be innovative thinkers

Conclusions

A military organization needs to manage its environment to provide secure conditions for the transition between generations. Generation Z puts pressure on the military organization because of their distinguishing features: "digital native", short span of attention, consumers, individual work orientation, low level of hierarchy acceptance, and others. On the other hand, the contemporary organizational environment has become unsecured and packed with many threats. Adapting to modern technology and its permanent presence within daily work represents another challenge for the military organization and its personnel. With respect to these, a military organization needs to focus on all that changes and start to develop future plans.

First of all, being a very conservative organization regarding its practices and traditions, the military will need to make significant efforts to attract and keep its new members. Perhaps the most important resource of the organization, the human capital is a factor we cannot neglect in forming the Z Generation personnel as their own rights, a big undertaking taking into consideration the contemporary financial, industrial, and security situations we live in today. Secondly, the organization should take into account developing a culture of mentorship in order to communicate values and principles. In this manner, the gaps between generations could decrease, and the military nucleus' cohesion will be stronger. Furthermore, the social contract between the military and its employees should be based on values such as trust, loyalty, and devotion. In the final, the leader should be educated to become the promoter of all the changes, and the military organization has to focus on his/her education and formation.

This article has a limitation: one of the methods used to collect data (direct observation) was limited to the Romanian Military organization. This aspect directly influenced the military's behaviors through (at least) national context (communism regime, education, values).

Endnotes

[1] Acronym coined by military strategists and lecturers at the U.S. Army War College to describe an entirely new situation that arose in the 1990s after the end of the Cold War and the collapse of the Eastern Block, stands for Volatility, Uncertainty, Complexity and Ambiguity.
[2] Nicoară Gabriela, Second research report for PhD – The Military Organizational Culture, National Defence University "Carol I," 2021.
[3] Shaheema Hamed, Vandana Sharma, A Study on Leadership Competencies of the generation Z in a VUCA World, International Journal of Advance Science and Technology, vol 29, No 9s, 2020: 2380.
[4] Shaffer and Zalewski, Career Advising in VUCA Environment, NACADA Journal 31 (1): 64–74, 2011, https://doi.org/10.12930/0271-9517-31.1.64.
[5] N. Bennett, G.J. Lemoine,"What VUCA really means for you" in Ankur Jain, "Understanding the Future of HRM Through the VUCA Lens," NHRD Network Journal, 2019: 81.
[6] Laurenţiu Grigore, The future of war- the hybrid war, Buletinul Universităţii Naţionale „Carol I", Bucharest, 2015, vol 2, nr. 2, https://revista.unap.ro/index.php/revista/issue/view/13.
[7] Jari Roy Lee Kaivo-oja, Iris Theresa Lauraeus, The VUCA approach as a solution concept to corporate foresight challenges and global technological disruption, Foresight, Vol. 20 No. 1, 2018: 36, https://doi.org/10.1108/FS-06-2017-0022.
[8] Mauro F. Guillen, 2030 – How today's biggest Trends will collide and reshape the future of everything, Ed. Litera, 2021: 57.
[9] Sgt. First Class Roland Hanks, What Soldiers Want: The Gen Z Perspective, U.S. Army Aviation Center of Excellence, 2022, https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2022/February/What-Soldiers-Want/.
[10] Robin Butler, Thematic Analysis: millennial generation retention in united states public sector organizations, Engaged Management Scholarship (EMS) Conference, 2018 Philadelphia, https://booksc.org/book/74684734/764812
[11] Karon Warren, What is Generation Z? , 2022, https://www.investopedia.com/generation-z-gen-z-definition-5218554.
[12] Annie E. Casey, What Are the Core Characteristics of Generation Z?, 2021, https://www.aecf.org/blog/what-are-the-core-characteristics-of-generation-z.
[13] Annie E. Casey, Statistics Snapshot: Generation Z and Education, 2021, https://www.aecf.org/blog/generation-z-and-education.
[14] Tracy Francis, Fernanda Hoefel, The influence of Gen Z—the first generation of true digital natives—is expandin, 2018, https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies.
[15] L. M. Breckenridge, "Curbing the "helicopter commander": Overcoming risk aversion and fostering disciplined initiative in the U.S. Army. Military Review, 2017:15, https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20170831_BRECKENRIDGE_Helicopter_Commander.pdf.
[16] Mascia Christopher, "Leading Generation Z. Abandoning the Zero Defect Mentality," 2020, last modified May 27, 2022, https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2020/May/Leading-Generation-Z/.
[17] Sally Cane, The Common Characteristics of Millenial Professionals, 2019, https://www.liveabout.com/common-characteristics-of-generation-y-professionals-2164683.
[18] Master Sgt. Christopher A. Miller, Preparing the Millennial Generation for Leadership, 2019, https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2019/September/Preparing-the-Millennial-Generation-for-Leadership/.
[19] Khysgiana Pineda, Generation Create? Gen Z might be the most creative generation yet, poll says, , 2020, https://eu.usatoday.com/story/news/nation/2020/08/18/generation-z-may-most-creative-yet-study-says/5589601002/.
[20] Bruce Tulgan, Meet Generation Z: The second generation within the giant „Millennial" cohort, 2013, https://grupespsichoterapija.lt/wp-content/uploads/2017/09/Gen-Z-Whitepaper.pdf.

08

FUTURE GENERATIONS AND NEW CHALLENGES: LEADERSHIP IN TIMES OF THE VUCA WORLD

ROBERT POTT

- **Author:** Captain (Air Force) Robert Pott, since October 2021, serving at the German Air Force Officer School. From 2013 to 2017, he studied Social Sciences and Public Affairs (M.A.), and from 2019 to 2021, Human Resource Development (M.A.) at the University of the German Armed Forces in Munich, mainly focusing on skills and competence development. The views contained in this article are the author's alone and do not represent the views of the German Armed Forces.

- **Abstract:** In the dynamically changing VUCA (a volatile, uncertain, complex, and ambiguous) world of the 21st century, military leadership faces numerous challenges, especially in its teaching, development, and its application. While, on the one hand, subsequent generations make different demands towards armed forces, the constant guarantee of personal and material operational readiness is becoming increasingly more important. Both aspects, the needs of new generations on the one hand and military leadership on the other, sometimes collide strongly. This is why future military leaders must acquire, possess and develop skills and competences to be able to meet the challenges of the VUCA world.

- **Problem statement:** How can military leadership skills and competences be optimized in order to meet the challenges of the VUCA world while fulfilling the requirements of personal operational readiness in the future?

- **Bottom-line-up-front:** Ensuring military operational readiness is a central military leadership task. Therefore, military leadership skills and competences are becoming more and more important. They must be developed in a holistic and goal-oriented manner, with the main focus on problem-solving skills.

- **So what?** Developing leadership skills and accompanying skills must be holistic and future-oriented. Target-oriented and in line with military requirements, training institutions must prepare future leaders for the upcoming tasks in the dynamically changing VUCA worldw.

Leadership and New Challenges

Armed forces are confronted with increasing challenges. Conflicts arise more frequently, and globalization has led to an increasing interconnectedness of different states and coalitions. Those challenges are often characterized as a result of the dynamically changing VUCA world (volatile, uncertain, complex, and ambiguous).[1] Crises, areas of tension, and conflicts can emerge. Wars such as Russia's attack on Ukraine in February 2022 and terrorism and internal conflicts require an ever-increasing goal- and mission-oriented approach. That's why flexibility and adaptability are becoming increasingly important and are of utmost necessity.[2] To meet these challenges, armed forces must guarantee personnel and material readiness at all times, and if "readiness suffers, the risks to forces increase."[3] The guarantee of personnel readiness is almost always a central leadership task. Personnel readiness can be achieved by successful personnel management (personnel planning, personnel recruiting, personnel administration, and personnel development)[4] and military leaders who can successfully lead their personnel in the challenging environment of the VUCA world.

For this reason, military leadership training is essential. Additionally, future personnel have different demands on their employer than those of previous generations. Generation Z is "radically different than [older generations], this generation has an entirely unique perspective on careers."[5]

That's why considering the potential views, needs, and thought patterns of upcoming generations will be crucial when establishing personnel readiness. Generation Z, for example, tends to value a strict separation of professional and private areas of their life and is rather critical of flexibility that a possible employer requires.[6] Those viewpoints can strongly collide with the requirements of the armed forces, the need for personnel commitment, and personnel readiness. That's why the areas of tension between the challenges of the VUCA world and the individual needs of new generations must be adequately addressed during military leadership training.

Volatile, Uncertain, Complex, Ambiguous

A strict separation of professional and private areas of life cannot always be guaranteed, since military missions often take place abroad. Military missions are mostly conducted in partnership with other states to "offset the operational burden of an intervention"[7], lower costs, and create political legitimation. In Romania, the German Armed Forces are supporting with the weapon system Eurofighter Typhoon as part of the NATO enhanced Air Policing South (eAPS) mission. In Slovakia, the German Armed Forces are supporting

colleagues with the weapon system PATRIOT as part of a so-called recognized mission contribution to NATO alliance defence.[8,9] Serving abroad is a challenge for individuals and their families. It is also a big challenge for future generations that tend to reject the necessity of this military need. This, of course, does not apply to every representative of Generation Z, but statistically, it applies to the majority.[10] Another example of the importance of personnel readiness is the NATO Response Force (NRF), which serves as NATO's quick intervention force.

In June 2022, NATO Secretary General Stoltenberg announced that the NRF would increase to over 300,000 soldiers. In principle, the NRF can be deployed within 5 to 30 days and should therefore be highly available. Part of the NRF is the Very High Readiness Joint Task Force (VJTF), a rapidly deployable task force. NATO set up the VJTF in 2014 after the Crimean crisis. The VJTF can be deployed within a few days. This places extremely high demands on the armed forces and their military leaders, who are responsible for fulfilling their unit's mission. To guarantee personnel readiness, military leaders must, therefore, „create meaning (...) and convey identification."[11] They must ensure personnel readiness within the shortest possible time.

Considering the needs of the following generations is difficult for military leaders. They have to ensure that their personnel meets the growing demands of operational readiness. Military leaders have to act as an example of individual commitment. They must offer orientation and structure through their leadership. Clear cause-effect relationships tend to decrease in a highly complex world, which is why it becomes more difficult, if not impossible, to predict the effects of causes. Due to the complexity, systems and organizations such as the armed forces can only be successful if all system members focus on the same goal.[12] This requires great leadership skills, especially since the values and needs of Generations Y and Z are contrary to the demands of the VUCA world on armed forces.

The classification of the world as a VUCA world, not only from a military perspective, creates numerous challenges. Armed forces in the 21st century must face these challenges to be able to fulfil their respective mission. Especially during military leadership training, skills can be developed to help meet those challenges.

Volatility characterizes dynamic changes over a certain period. Unforeseen, dynamic events can occur within a very short time frame, which might have a global impact. Russia's war against Ukraine in 2022 can be defined as an example of volatility. To avoid being overwhelmed by unpredictable dynamic events, military leaders need to be aware

of the magnitude of volatility. Societies and generations can quickly change their perception and value system. Military leaders must therefore create more meaning and convey identification with the assignment.[13] It is impossible to fully reduce the effects of a volatile world, but leaders can prepare their units for different situations.

Uncertainty characterizes the unpredictability of events. Since the world is becoming more and more interconnected and values and ideologies do not only occur in specific areas, the world can no longer be strictly divided into different systems of values and ideologies. A possible opponent is rarely clearly definable. Globalization makes the world increasingly interconnected. Science, business, and societies are worldwide exchanging ideas, goods, and people. This can cause uncertainty and lead to insecurity in societies.[14] Information gathering will become more important if it is not certain how the environment will be. That's why leaders must lead with a holistic approach, openness to information, and strong communication skills.

The complexity of the VUCA world includes several factors. Complexity consists of globalization, digitalization, and ever-increasing dependencies. Those dependencies of different systems have resulted in more and more aspects that have an immediate and direct impact on our everyday lives. This also has a major impact on military service. Whether it is while handling increasingly complex weapon systems or the deployment of personnel to distant areas of operation. Complexity can be met with problem-solving procedures.

The ambiguity of situations, information, or events can make it difficult for people to orientate themselves in the environment. The questions of "why" and "how" are becoming more important. The ambiguity and lack of orientation can be countered by giving orientation, experimenting more, and allowing mistakes. In a military context, this means that military leaders must be trained in a positive failure culture. This requires an organizational culture in which open dialogue is valued, and the open search for solutions is at the forefront of everyday action. A positive and future-oriented organizational culture is the basis for leaders to become successful. A positive organizational culture can lead to "high commitment and trust."[15] Those factors are mandatory when working with Generation Y and Z.

Values and Standards

As role models, military leaders must live the values and standards of the organizational culture. They must orient their behaviour and activities towards these values.[16] The

leadership philosophy based on this should include an honest and familiar exchange between military leaders and their personnel. The higher the hierarchy, the more responsibility leaders bear for the results and also for their personnel. Personnel needs to develop a will of commitment. They need to act more independently and self-organized but always stay aligned with the values and rules communicated by the leader and orientated towards the sense of the mission.[17] However, this begins with training military leaders, who should be holistically trained and orientated towards problem-solving since all factors of the VUCA world impact operational readiness. Ensuring operational readiness and bearing responsibility for results is a leadership task that those in charge must fulfil. Especially the volatility of the VUCA world and the need to prepare resources for potential future events is a major challenge for the armed forces. This often contrasts the personal needs, values , and demands of people from the following generations.

Organizations and companies are increasingly faced with the challenge of bringing together different generations. The individual generations differ greatly in their values, plans, and needs. In particular, institutions and organizations have to change their thinking due to the years of strict regulation in professional life and the breaking up of these structures due to the challenges of the VUCA world.[18]

In the context of the question, a proper target group classification makes sense. The unambiguous definition of specific peer groups in generations is therefore indispensable. Organizations, companies, and armed forces must deal with the needs, values, and respect of different generations to fulfil recruitment goals. Especially professional armies, which have been struggling with recruitment problems for years, have to focus on the needs of their specific target groups. In June 2022, the German Armed Forces had as many employees as in September 2019, even though the challenges have increased.[19] To deal with this and to make civil service more attractive, armed forces must reach out to the next generations. This includes various approaches, some of which have already been implemented, e.g., enabling flexible, mobile working, knowledge transfer, and further training opportunities that can ensure continuous skills development in the sense of lifelong learning.[20] Western armed forces do not take fundamentally different approaches in this regard. In 2016, the German Armed Forces already committed to a personnel strategy that is explicitly intended to address upcoming generations that have not yet entered the labour market.[21]

Generations comprise specific age cohorts that share aspects such as birth periods, defining social and historical events, and, therefore, attitudes and identities.[22] Even though all individuals within a generation have different individual characteristics,

strengths, and weaknesses, they can be grouped based on overarching aspects. Generations cannot always be clearly distinguished from one another; their transitions are fluid. It is worth taking a look at those generations that are of working age or are entering the working age: The "Baby Boomer" generation (1956 - 1964), Generation X (1965 - 1979), Generation Y (1980 - 1993) and Generation Z (1994 - 2000).[23]

The Generations

The people who belong to the „Baby Boomer" generation were born after Second World War. Rising birth rates significantly characterised these times. This generation grew up with a very large number of people of the same age and in a relatively protected environment. To this day, they represent the majority; they dominate the public world as well as the working and professional world. Due to the large cohort size, competitive behaviour is extremely pronounced in this generation. People of the „Baby Boomer" generation are nevertheless considered to be strongly team-oriented and particularly willing to perform.[24]

Generation X represents the group of people born between 1965 and 1979. On the one hand, these people were not directly affected by the consequences of the Second World War. Still, they had less prosperity, less economic security, and higher unemployment. In times of slowing economic growth, companies cut jobs and reduced governmental benefits. This led to a great sense of insecurity. Therefore, the people of Generation X are considered more insecure, cautious, and reserved than those of the generations before them. The economic crises in the 1980s and 1990s, in particular, accelerated these attitudes.[26]

The following Generations Y and Z, people born from 1980 to 1993 and 1994 to 2000, represent the generations that have entered or are about to enter the working world. Organizations have to deal with recruiting these people because they can be tied to the organization for a longer period due to their less advanced age.

In Germany, the third largest generation is Generation Y. General demands and economic, political, and social expectations of this generation have increased. In contrast, perceived global security has decreased, and events such as 9/11 and the constant and present threat of global terrorism have created strong insecurity. In addition, the economic pressure on people of Generation Y, who have grown up during China's economic boom, is increasing. Moreover, Generation Y tends to be increasingly skeptical and uncertain since organisations and institutions have been involved in scandals or triggered fi-

nancial crises. Events such as the nuclear disaster in Fukushima have also contributed to this sense of insecurity.[26] That's why Generation Y is considered to be strongly focused on the present; they perceive the future as uncertain. They are considered to be more ego-centred, they tend to give priority to the realisation of individual needs over community needs and feel intense frustration that partly unrealistic expectations are placed on them and cannot be met. They want a job that gives them free space for themselves and their private life.[27]

That's why Generation Y people are similar to those who belong to Generation Z. They were born between 1994 and 2001. Understanding this generation's needs and value system is essential for the sustainability and personnel operational readiness of armed forces. They especially need to recruit people of this generation.[28] Their representatives have not yet all arrived on the labour market. Due to advanced digitalisation and globalisation, people from Generation Z have increased contact with previous generations and try to learn from them, their mistakes, and their thought patterns. Basically, the framework conditions in which people of Generation Y and Generation Z have grown up and are growing up are the same.

Nevertheless, people of Generation Z have adapted differently to their environment. They have understood that the wishes of generation Y could not all be fulfilled. They perceive their environment more realistically and are more cautious. They tend to worry about their future and try to find self-realisation even within a limited framework. They want to be integrated into a community that offers them security and is non-volatile. People of Generation Z are also considered to be much more reserved. They are more concerned about the short-term future and set less exaggerated goals for themselves. People of Generation Z make a clear and sharp distinction between their private and professional worlds. They neither want to be available all the time nor their time to be dominated by professional activity.[29] The expectations of their career are reserved. They express a great desire for job security and want much time for their own private life. They also use these characteristics to decide on an employer. In the 21st century, armed forces must increasingly address the wishes, needs, and values of people from Generation Y and Generation Z to be able to guarantee personnel readiness in the long term. However, this does not only mean that armed forces must be attractive enough as an employer for these people but also that greater emphasis is placed on how people of Generation Y and Z think, act, what values and views they hold and how they can be led efficiently. If people of Generation Y and Z are to be led in a mission-oriented way, military leaders must understand their needs and how they think. This can be trained in military leadership training.

The aforementioned challenges of Generations Y and Z can only be met by offering orientation. One way to respond to the perceived insecurity of Generation Y and Z is through sense-making.[30] The big challenge, however, is that military leaders are also exposed to the external influences of the VUCA world. Therefore, leadership training must be intensively oriented towards the VUCA world's influences and one's own value systems and needs. Military training teaches future leaders how to respond adequately to the increasing demands placed on them.[31] This is the basis for successfully leading people of Generation Y and Z.

Measures

Leadership itself fulfils different functions - a locomotion function and a cohesion function. On the one hand, the fulfilment of the mission and the achievement of objectives are guaranteed by the leadership of the personnel, and on the other hand, social cohesion is ensured by proper leadership. Due to the extensive needs of Generations Y and Z, both functions are becoming increasingly important for successful leadership. Therefore, lifelong learning and developing leadership skills are inextricably linked.[32] It is as essential for leaders to understand how a team can work together in the best possible way. Differences between the generations have the potential for conflict. Especially when young military leaders have to lead a team of people from different generations. They should show authentic respect for the accomplishments of more experienced personnel but also need to be perceived as a competent leader and should not patronize them. Young leaders should also reveal what their weaknesses are, but in a self-confident manner. Strong communication skills are, therefore, mandatory to be perceived as an authentic leader.[33]

Moreover, the requirements of the VUCA world create certain leadership tasks that have to be done by leaders:

1. Establish a stronger clarity of purpose: To secure mission fulfilment, the personnel should have limited freedoms and act partly on their own responsibility. Accordingly, the mission must be clearly formulated and clearly defined goals must be set.
2. Convey meaning: Conveying the meaning and creating a strong identification for the mission are central leadership tasks. Those tasks become increasingly important and require an ever-increasing communication skills by leaders.[34]

Leadership competence is improved by developing specific competencies. These include professional competence, methodological competence, social competence, self-com-

petence, and numerous other areas, such as a distinctive strategic competence or implementation-oriented competence, which includes a strong personal decision-making ability and the ability to think and act in a results-oriented manner.[35] Due to the individual needs of Generations Y and Z, social competences, in particular, have gained importance over purely professional competences in recent years. Since emotions can motivate, inspire and convince, the development of emotional intelligence is essential for military leaders in the 21st century.[36] Emotional intelligence is formed through empathy, self-leadership, self-control, and pronounced self-reflection. Emotional intelligence can only be developed through constant practice. Communication and contact between military leaders and their personnel are therefore crucial. Self-reflection is essential insofar as it alone determines whether lessons are learned from mistakes made and what kind of experience is gained from them. Mistakes and mis-behaviour should always be reflected upon. The willingness to take responsibility for oneself plays a significant role. The experience gained must be transformed into knowledge and ultimately applied on-the-job. In this way, existing knowledge can be linked with new knowledge, and it is possible to react appropriately to a volatile and rapidly changing environment.

Furthermore, one's own communication competence is a guiding principle for leadership success. As a leader, various aspects need to be taken into account here: Active listening and asking open questions, removing doubts, giving open feedback, and feedback that is appropriate and always linked to a learning aspect.[37] Leaders also need to be perceived not only as a superior but also as a coach; they need to develop their personnel's competences actively.[38] Continuous feedback and reflection on work results and mission accomplishment can develop various competencies among subordinate personnel. Intensive coaching of personnel is therefore indispensable for military leaders. Developing competencies can only be done through comprehensive and holistic training, which is supported as much as possible by on-the-job learning situations.[39]

However, a well-developed leadership competence is no longer sufficient to prepare military leaders for most challenges. Developing competencies that provide structure and security in an uncertain environment must be strongly focused. The demands and burdens on military leaders have increased significantly in recent decades.[40] In particular, military leaders of middle management are exposed to higher stress and higher requirements. Military middle management leaders are subordinate to their executive leaders but are also responsible for their personnel and fulfilling the mission. Their executive leaders, e.g., their commanders, usually formulated that mission. The external influences that place the VUCA world on all people make it more and more difficult for leaders to fulfil their mission.[41] They frequently have to make faster operational decisions and must

ensure that these are implemented. Pronounced time pressure and action leave little time for reflection or considering different courses of action. Due to influences caused by the VUCA world, middle management leaders often consider those challenges "unrealistic."[42] Due to the manifold challenges and dynamically occurring situations, military leaders are exposed to enormously high work pressure. For them, it is unusual to „quit" work at a certain time of day. They are available early in the morning, ensure mission fulfilment, and serve as contact persons for their personnel after duty hours. They must also be accountable to upstream and downstream hierarchical levels for their decisions made. That is less and less attractive for people from Generation Y and Z; only 37% aim for a leadership role.[43]

Therefore, personal resilience, which means a high level of mental elasticity and flexibility, must be developed as basic competence. It is necessary to be able to think and act clearly and in a mission-orientated manner in an uncertain environment. Personal resilience is also necessary to be perceived as a role model. A pronounced resilience is, therefore, not only indispensable for military leaders but is also instrumental in providing orientation.[44] Resilience also counteracts the generational conflict of Generation Y and Z, who want a stronger and stricter separation of the professional and private worlds from their employer. Building and developing strong resilience can serve as a measure to counteract this. This happens because resilience can guarantee the individual's ability to function despite challenges and adversely affecting circumstances. Resilience can be built up during military training. For its comprehensive development, on-the-job measures are particularly necessary.[45] These can be training exercises but also the creation of psychological stress in challenging situations. On the other hand, organizational framework conditions should promote resilience.[46] Resilience is a core competence to maintain and promote mental health; therefore, it is indispensable for personnel readiness.[47]

Certain leadership styles that explicitly address the needs of Generation Y and Z are also additionally worthy of analysis - especially the charismatic leadership and transformational leadership style.[48] The proportional combination of both leadership styles can create a foundation for successful leadership. Charismatic leaders are aware of their abilities and trust their leadership style. They develop problem-solving strategies and thus secure the trust of their personnel. They can reinforce their trust and enhance their reputation by constantly repeating this process. As a result, they can inspire, respond dynamically to changes as they occur, and develop innovative solutions. They lead by example through „self-sacrifice and personal risk-taking".[49] Transformational leadership is strongly characterised by leaders supporting their personnel and increasingly assuming a mentoring role. In doing so, they offer support in the face of challenges and orientation.

Accordingly, problem-solving processes are initiated not only by the leader but also by the personnel. The combination of both leadership styles, transformational-charismatic leadership, can be an inspirational and supportive leadership style.

With such a leadership style, leaders set a direction, identify challenges, convince with their abilities, are role models for their personnel, and involve them in problem-solving approaches. Military leaders should be able to inspire their personnel for the common mission. Mission fulfilment can be ensured, as the personnel can also proactively contribute to solving problems. In this way, personnel can also be intrinsically motivated to develop problem-solving approaches. Such a leadership style can be developed through communication, problem-solving and teamwork training. It also responds to the needs of Generation Y and Z, allowing freedom in action to work out problem-solving approaches. It is not top-down but rather focused on achieving the best possible results in a team. However, leadership styles cannot be „applied" across the board, but always include a personal and individual imprint of the leader herself/himself. Even though a uniform leadership style cannot be established, it makes sense to highlight factors of great importance for developing a personal leadership style: Individual influence, inspiration and motivation, intellectual stimulation, and individualized treatment.[50]

Stimulations, Inspiration, Motivation

Individual influence can be exerted by being perceived of as a role model and acting with integrity. When leaders give clear tasks and motivate for the mission completion, military leaders act inspiringly and motivate. Intellectual stimulation is defined by problem-solving approaches and is also characteristic of enabling further training programs. Fixed structures and thought patterns can be broken down, and innovation, creativity, and flexibility in thinking and acting can emerge. In addition, they respond to the demands of Generation Y and Z by treating their personnel individually and appreciatively. For leaders, it is necessary to pass on the knowledge they have acquired and the experience they have gained to their personnel in a targeted manner so that they use this learning situation and can also complete mission tasks on their own.[51]

Ensuring personnel readiness is a challenging task. Leaders must "communicate expectations and clearly express the importance of readiness."[52] Especially when the needs and value systems of the generations to be included may conflict with the necessities of fulfilling the mission in an increasingly dynamic world. Nevertheless, military leaders can contribute to personnel readiness if their competencies are developed. Since the demands on leaders have never been higher, these competencies are manifold.

It has been pointed out that one's individual leadership competence is decisive in whether mission fulfilment can be guaranteed. Leadership competence must be developed holistically. The functions of leadership - locomotive function and cohesive function - must be addressed. While it is challenging to bring together people from different generations, leaders must ensure mission fulfilment with their personnel and guarantee social cohesion through leadership. Furthermore, establishing emotional intelligence needs to be emphasized. That's why strong developed social skills and one's own competence for self-reflection are indispensable.

The increased demands on military leaders also require pronounced resilience, which can be developed through on-the-job programs, e.g., exercises during training or psychological stresses that develop one's own resilience. Finally, it is worthwhile focusing on different leadership styles that enable the proactive participation of personnel. They should be included in the development of different problem-solving strategies. For example, the transformational-charismatic leadership style should be highlighted, which strongly involves a leader's personnel in developing problem-solving strategies. This meets the needs of Generations Y and Z, who increasingly want more freedom in their job. Generation Y and Z also demand more clarity of meaning. Therefore, leaders need to create a meaningful purpose.

While the challenges of the VUCA world are increasing, the necessity of mission-orientated leadership that strongly includes Generation Y and Z is becoming more critical. Leaders have to fulfil the arising balancing act. This area of tension can be mastered if training military leaders are holistic and consider all external influences. This challenging task ultimately contributes a great deal to personnel readiness, which is otherwise increasingly difficult to guarantee in a more volatile, uncertain, complex, and ambiguous 21st century.

Endnotes

[1] Julia Heller, Resilienz für die VUCA-Welt. Individuelle und organisationale Resilienz entwickeln, (Wiesbaden: Springer, 2019), 51-52.
[2] Christian Freilinger, Vision und Leadership, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.97, (Köln: Deutscher Wirtschaftsdienst, 2012), 4.5.
[3] DoD Fact Sheet, "Sequestration's Impact to Regaining Readiness," last accessed August 31, 2022, https://dod.defense.gov/Portals/1/Documents/pubs/DoD_Readiness_Fact_Sheet_FINAL.pdf
[4] Martin Tschumi, Handbuch zum Personalmanagement (Zürich 2013), 16-18.
[5] Deloitte, "Understanding Generation Z in the workplace," last accessed August 31, 2022, https://www2.deloitte.com/us/en/pages/consumer-business/articles/understanding-generation-z-in-the-workplace.html.
[6] Susanne Böhlich,Generation YZ, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.76 (Köln: Deutscher Wirtschaftsdienst, 2012), 13-14.
[7] Samuel Absher, Nathan Chandler, Jennifer Kavanagh, et. al, Building Military Coalitions, Lessons from

U.S. Experience (Santa Monica: RAND Corporation, 2021), 171.
[8] Bundeswehr, "Enhanced Air Policing South," last accessed August 31, 2022, https://www.bundeswehr.de/de/einsaetze-bundeswehr/anerkannte-missionen/nato-air-policing-baltikum.
[9] Bundeswehr, "Slowakei – EVA," last accessed August 31, 2022, https://www.bundeswehr.de/de/einsaetze-bundeswehr/anerkannte-missionen/slowakei-enhanced-vigilance-activities.
[10] Hedda Nier,"So tickt die Generation Z," last accessed September 25, 2022, https://de.statista.com/infografik/12176/so-tickt-die-generation-z-in-oesterreich/.
[11] Björn Appellmann, Führen in einer komplexen Welt. Die Zeit der Helden ist vorbei, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.138 (Köln: Deutscher Wirtschaftsdienst, 2012), 11.
[12] Ibid., 7-8.
[13] Ibid., 11-12.
[14] Zukunftsinstitut, „Megatrend Globalisierung," last accessed August 31, 2022, https://www.zukunftsinstitut.de/dossier/megatrend-globalisierung/.
[15] Ahmet Aysan, Bilgin Faruk, Mehmet Huseyin, Hakan Danis and Demir Ender, Eurasian Business Perspectives. Proceedings of the 23rd Eurasia Business and Economics Society Conference (Cham: Springer, 2020), 34.
[16] Björn Appellmann, Führen in einer komplexen Welt. Die Zeit der Helden ist vorbei, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.138 (Köln: Deutscher Wirtschaftsdienst, 2012), 9-10.
[17] Idem.
[18] Ferihan Steiner, Führung der Generation Y durch Servant Leadership, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.73 (Köln: Deutscher Wirtschaftsdienst, 2012), 1-2.
[19] Thomas Wiegold, „Personalstärke Juni 2022. Jetzt knapp über 182.000 nach FWDL-Rückgang," last accessed August 31, 2022, https://augengeradeaus.net/2022/07/personalstaerke-juni-2022-jetzt-knapp-ueber-182-000-nach-fwdl-rueckgang.
[20] Wissenschaftliche Dienste, Deutscher Bundestag, Personalgewinnungsstrategien im Vergleich. Die Streitkräfte Deutschlands, Kanadas, der Niederlande, Norwegens und der Schweiz unter Berücksichtigung der entsprechenden Strategien im jeweiligen öffentlichen Bereich (Berlin 2019), 6.
[21] Idem.
[22] Thomas Batsching, Generation Y – Was tun? Empfehlungen für Konzepte des Personalmanagements, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.61 (Köln: Deutscher Wirtschaftsdienst, 2012), 1-2.
[23] Intergeneration, „Babyboomer, Generation X, Y, Z etc.: Die Generationen im Überblick," last accessed on August 31, 2022, https://intergeneration.ch/de/grundlagen/generation-x-y-z-ueberblick/.
[24] Susanne Böhlich, Generation YZ, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.76 (Köln: Deutscher Wirtschaftsdienst, 2012), 3.
[25] Ibid., 4.
[26] Neli Mihaylova, „Generation Y denkt und arbeitet anders," last accessed on August 31, 2022, https://www.allgemeine-zeitung.de/panorama/leben-und-wissen/generation-y-denkt-und-arbeitet-anders_18055573.
[27] Susanne Böhlich, Generation YZ, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.76 (Köln: Deutscher Wirtschaftsdienst, 2012), 5.
[28] Wissenschaftliche Dienste, Deutscher Bundestag, Personalgewinnungsstrategien im Vergleich. Die Streitkräfte Deutschlands, Kanadas, der Niederlande, Norwegens und der Schweiz unter Berücksichtigung der entsprechenden Strategien im jeweiligen öffentlichen Bereich (Berlin 2019), 5.
[29] Christian Scholz, Generation Z. Wie sie tickt, was sie verändert und warum sie uns alle ansteckt (Weinheim: Wiley, 2014), 199-200.
[30] Ferihan Steiner, Führung der Generation Y durch Servant Leadership, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.73 (Köln: Deutscher Wirtschaftsdienst, 2012), 3-4.
[31] Nina Leonhard, Ines-Jacqueline Werkner, Militärsoziologie – eine Einführung, (Wiesbaden: Springer, 2012), 436.
[32] Hagen Rudolph, Strategisch wichtige Schlüsselkompetenzen von Führungskräften, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.11, (Köln: Deutscher Wirtschaftsdienst, 2012), 5.
[33] Claudia Schneider, Wenn die gewohnte Ordnung auf dem Kopf steht, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.139 (Köln: Deutscher Wirtschaftsdienst, 2012,) 10-11.
[34] Björn Appellmann, Führen in einer komplexen Welt. Die Zeit der Helden ist vorbei, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.138 (Köln: Deutscher Wirtschaftsdienst, 2012), 11-12.
[35] Anna Nguyen, Führungskompetenzen lernen und entwickeln, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.169, (Köln: Deutscher Wirtschaftsdienst, 2012), 3-4.
[36] Ibid., 8.
[37] Ibid., 9-10.

[38] Jim Thomas, Ted Thomas, "Mentoring, Coaching and Counseling. Toward a Common Understanding," last accessed on August 31, 2022, https://usacac.army.mil/sites/default/files/documents/cace/DCL/DCL_Mentoring.pdf, 4.
[39] Paul Lawrence, Leading Change. How Successful Leaders Approach Change Management (London: Kogan Page, 2015), 194.
[40] Rainer Niermeyer, Nadia Postall, Führen: Die erfolgsreichsten Instrumente und Techniken (München: Haufe, 2008), 7.
[41] Alexander Groth, Führungsstark im Wandel. Change Leadership für das mittlere Management (Frankfurt am Main: Campus Verlag, 2016), 14-17.
[42] Ibid., 8.
[43] Nicole Strauss, Mit Resilienz gegen Stress und Burnout, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 9.23 (Köln: Deutscher Wirtschaftsdienst, 2012), 1.
[44] Julia Heller, Resilienz für die VUCA-Welt. Individuelle und organisationale Resilienz entwickeln (Wiesbaden: Springer, 2019), 4.
[45] Gregor Paul Hoffmann, Organisationale Resilienz. Grundlagen und Handlungsempfehlungen für Entscheidungsträger und Führungkräfte (Wiesbaden: Springer, 2016), 6.
[46] Nicole Strauss, Mit Resilienz gegen Stress und Burnout, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 9.23 (Köln: Deutscher Wirtschaftsdienst, 2012), 16.
[47] Leibniz Institute for Resilience Research, "Stichwort Resilienz," last accessed on August 31, 2022, https://lir-mainz.de/resilienz.
[48] Rafaela Kraus, Tanja Kreitenweis, Führung messen. Inklusive Toolbox mit Messinstrumenten und Fragebögen (Berlin: Springer, 2020), 26-31.
[49] Ibid., 28.
[50] Ferihan Steiner, Führung der Generation Y durch Servant Leadership, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 7.73 (Köln: Deutscher Wirtschaftsdienst, 2012), 4-5.
[51] Björn Appellmann, Führen in einer komplexen Welt. Die Zeit der Helden ist vorbei, in: Laske/Orthey/Schmid: PersonalEntwickeln, Beitrag Nr. 6.138 (Köln: Deutscher Wirtschaftsdienst, 2012), 7-8.
[52] James S. Moore, "Personnel readiness in 6 'easy' steps," last accessed on August 31, 2022, https://www.army.mil/article/203673/personnel_readiness_in_6_easy_steps.

09

MILITARY LEADER'S IDENTITY, ROLE, AND COMPETENCIES: INTERRELATED ASPECTS OF LEADER DEVELOPMENT

ÜLLE SÄÄLIK

- **Author:** RÜlle Säälik (Ph.D., Educational Sciences) is a Lecturer-Field Lead at the Estonian Military Academy. Her research interests include educational psychology, leader development, and morale. The views contained in this article are the author's alone and do not represent the views of the Estonian Military Academy.

- **Abstract:** Leader development includes obtaining certain competencies. For more internalised adoption of the officer's role, it is necessary to raise cadets' self-awareness and clarify future role expectations so cadets can identify and verify their future role. Several learning activities may help reveal one's identity and develop such intrapersonal skills to achieve life-long self-directed development of officer competencies. The Estonian Military Academy has researched the use and effect of those activities, and examples of qualitative studies are presented in this article.

- **Problem statement:** How to achieve lifelong, self-directed development of officer competencies and internalised commitment to the officer's profession?

- **Bottom-line-up-front:** Leader competencies can be developed more efficiently when integrated with a deeper understanding of one's professional role, thus contributing to internalised commitment to the profession and building a more robust professional identity.

- **So what?** As a person naturally strives toward clearer self-determination as well as reasoning one's actions in life, military academies should also promote self-awareness in the light of the officer's and leader's role and identity, using self-assessment, analysis, and reflection while clearly communicating the expectations for the role and providing the necessary support.

Introduction

Having competent officers committed to their profession, capable and motivated to continue development throughout their career, is probably the dream of every military organisation. Yet, the question of how to achieve this is the subject of investigation among educators and educational scientists. As US Army Major Todd Hertling stated almost a decade ago, "leader development is in need of a jumpstart".[1] Hertling's assertion is true, despite the US Army having a very long and thorough leadership development experience.

Beyond knowledge and skills, military education is also expected to form attitudes and build character. Moreover, as military educators, we must prepare our people to take the lead and responsibility for their development. Thus, we should ask ourselves what we can do to help our learners with such challenges for the best preparation in the ever-changing environment.[2] The challenge in the military field is even more difficult as we deal with changing societies and generations. Western democratic societies have turned towards rising individualism and primacy of self-interest, with rights outweighing responsibilities. This situation contradicts the traditional traits and demands of the armed forces; collective nature, obedience to authority, idealism, and altruism as shared values.[3]

To achieve a life-long effect, our goal should be towards the "intrinsic … life-long pursuit of expert knowledge" of every learner we work on, because being a leader in its very essence means being in a constant learning and development process as an example and a role model to our followers.[4] To summarise, to be good at supporting the development of our military leaders (as external actions), we must initiate and guide their self-development (actual changes taking place internally).

How military leaders perceive themselves and how they understand their role as a leader may affect not only their work efficiency and relationship with others but also how subordinates see their work and affect both sides' job satisfaction.[5] Therefore, the aspects of role perception (who I think I must be, what I think I must do, what characteristics I must have) as well as identity (who I think I am, what I do, what characteristics I have) were taken under focused consideration in the Estonian Military Academy while working on the leader development programme. Together with the military leader competency model, both as the extended role description and a framework for assessment, analysis, and development decisions, formulated in 2020, the research on identity and role is expected to contribute to military leader education and thus to the effectiveness of the Estonian Defence Force personnel in general.[6]

Role and Identity – How We Position Ourselves Reflects On Our Professional Success

Identity as a phenomenon is defined as the social positioning of self and others or cognitive schemas defining situations and receiving cues for behaviour.[7,8] This includes standards of what is expected of a particular role.[9] A role is also defined as a set of expectations tied to a social position that guides people's attitudes and behaviours. Role identity is a set of internalised meanings of that role or meanings that people attribute to themselves while in a particular role. It is profoundly affected by the widespread notion of a role in the society or the group.[10] To perform well in a role, people need to be aware of its structural features (behaviours to be accomplished) or its expected features (behaviours expected of, prescribed, or proscribed for that role).[11] When considering the professional role, we are talking about work tasks and duties, their success criteria, abilities, attributes, or the qualification needed. Yet, as we can see, it is not only about knowing and understanding the features but also, more importantly, internalising them and identifying ourselves in terms of those features.

Professional identity is a relatively stable set of attributes, beliefs, values, motives, and experiences that people define themselves in a particular professional role as a part of that organisation, which forms over time and enables the person to get an overview of their preferences, talents, and values.[12] Thus, military organisations and their commanders or other relevant figures accompanying the role performer should be able to communicate clearly what they expect of a military leader. The person preparing for or performing in that role shall then have the chance to adapt to it, assess themselves according to those guidelines of role features, and make conscious decisions for learning.

When a person understands themselves better, they are more self-confident and understand better what is expected of them.[13] As for the role, the person should identify the role standards and compare them with themselves. Identity verification is expected to occur "by making the perceived meanings about himself in the situation (including the role in this situation) correspond to the meanings in his identity standard".[14]

According to a study by the Norwegian Army, military identity—the degree to which soldiers and officers are motivated and willing to internalise the expressed values and goals of the Armed Forces—can predict both perceived military competence and skills and organisational commitment; notably, operational identity appears as an important predictor of military performance.[15] Therefore, it is crucial to define the nature of the military profession in every military organisation along with the shared values and goals, competencies needed, and mechanisms to help its people internalise them, to identify themselves in these terms.

Military Leader Competencies, Their Development, and Integration Into Identity

Individual military identities are about practices rather than about attributes.[116]] Thus, when considering an image of a good military leader, one should (and often does) think of one's actions, although the character-based approach to leadership is also widespread. It is not that a person's personality traits are irrelevant, but it seems easier to assess and probable to change one's behaviour; therefore, a leader's actions and ability to behave in a certain way are taken into account. In terms of educating or training someone, this is the combination of knowledge, skills, and attitudes formed during the training.

An individual's self-perception influences how they think, act and set goals for themselves.[17] By acting in a professional role, we mean completing one's duties, both prescribed and what the person sees as needed for that role. A certain set of competencies is required in order to obtain an officer's role. These competencies may vary with the position or level of command. A person preparing to take a particular role needs to know the expected behaviour and what knowledge, skills, or attitudes are necessary. It is also essential to recognise and analyse what the individual already knows, and can do, what kind of attitude and motives drive them, and what they need to cope within that role.

Aligned with previous research on leadership and cognisant of social changes in our society as well as organisational needs (in this case, those of the Estonian Defence Forces - EDF), a competence model for military leaders was composed (see Figure 1).[18] The model consists of three dimensions and six competencies: a task-oriented dimension: management and technical/professional competencies; a change-oriented dimension: leadership and conceptual competencies; and a relation-oriented dimension: interpersonal and intrapersonal. This leader competence model is unique due to its simplicity, while most well-known leadership models tend to provide long lists of actions or characteristics and traits hard to comprehend. Yet, the model is also universal, based on leadership theories widely recognised in western cultures. It has a simple stem structure with flexibility as it accepts the variety of competencies for different levels of leadership and different role-specific tasks. Thus, the model's authors believe it applies beyond Estonia to the countries of similar western democratic societies that strive towards human-centred leadership and value leaders' self-development throughout their careers.

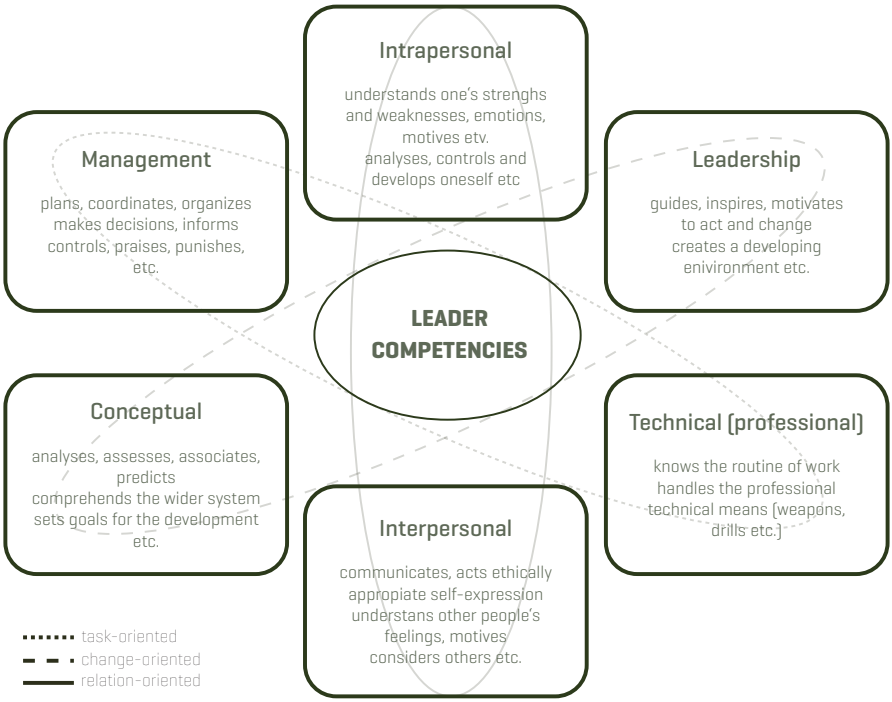


Figure 1. A modified version of the military leader competency model MILTIC[19], dimensions based on Meerits and Kivipõld (2020).[20]

The MILTIC model is an acronym derived from six main fields of leader competencies: Management, Intrapersonal, Leadership, Interpersonal and Conceptual. It has been tested by several interest groups: officers at platoon, company, and battalion levels, non-commissioned officers, cadets, and master's degree students at the military academy, as well as conscripts and reserve platoon leader trainees, the results of which are detailed below.

Comparing one's current self-perception and possible ideal selves may have significant motivational consequences.[21] Thus, good quality feedback on leader competencies with thorough self-analysis and reflection helps improve cadets' intrapersonal competency. Such behaviour also encourages continual self-development after the studies at the academy and promotes lifelong learning and improvement throughout a career. Thus, it is necessary to raise (future) leaders' self-consciousness during studies through different developmental activities such as clarification of one's identity and strengths

and weaknesses. Honest and thorough analysis and acknowledgement of strengths and accepting weaknesses are the very essence of the above-described competency model and are key to lifelong development.

Efficient development is based on the following elements: challenge—a task demanding extra effort; assessment—including self-assessment and that from others (instructors, co-learners, etc.) at the beginning, during, and after the process or event to offer experience; and support—the environment, in general, being supportive, tolerating mistakes as learning opportunities, instructions with clear criteria and so on.[22] Based on the above, we can see that a leader's competencies (knowledge, skills and attitudes) can be developed more efficiently when integrated with deeper self-determination, an understanding of one's professional role, and clarification of its duties and demands, thus contributing to the internal commitment to the profession and building a stronger professional identity.

To sum up, for internal and thus more permanent adoption of the officer's role, it is necessary to raise cadets' self-awareness and clarify future role expectations. In this way, cadets can identify and verify the role. Such changes do not occur alone but only when supported with regular guidance provided by mentors, orchestrated challenges prepared by teaching staff, and followed by an honest and systematic self-analysis by cadets after accomplishing such learning challenges.[23] Such an approach demands comprehensive changes and implementation of new practices adopted by a wide range of educators at different levels of military education and should not be done hastily. The educators need to comprehend and believe in the principles as well as be able to apply the appropriate educational tasks. In addition, the whole academic environment needs to be aligned accordingly, providing challenges, assessments, and support throughout the training processes. The effect of the measures still needs to be proven.

The following section presents proof and considerations of what and how to use military education to achieve the abovementioned self-development goals. The development programme and research studies are still ongoing; thus, the presented ideas and interim conclusions should be considered with caution and are not to be generalised yet.

Research Results and Implementation of the Aspects of Role, Identity, and Competencies into Training Practice

Several studies at the Estonian Military Academy have revealed the interrelatedness of those aspects—competencies, role, and identity—in military leader development, indicating related issues and showing how such a consistent and integrated approach can help of-

ficer candidates to comprehend and adopt their future role and verify their officer identity. This section presents examples of qualitative studies to illustrate and demonstrate how military academies and defence forces may gain from thorough work on their personnel's role perceptions, self-analyses, and -development.

NCOS' SELF-PERCEPTION THROUGH THE PRISM OF COMPETENCIES

A qualitative study of non-commissioned officers' self-perception of their role and demands for their role and competencies, as described in job descriptions, revealed that there are several indications of role conflict and problems due to role ambiguity or overload potentially affecting the NCOs' work and well-being. A random sample of NCOs' job descriptions was analysed and compared to the results of a learning activity collected during 2019–2021 in follow-up training courses. The activity asked participants to describe the role of an NCO (who an NCO is, what an NCO does, must do, or is expected to do).[24]

The study revealed discrepancies between the officially stated role expectations and the self-perceived understanding of their role as NCOs. For example, the cross-case deductive content analysis showed some imbalance between the competencies needed for duties when the official and self-perceived demands were compared (see table 1).[25] We can see that the official role description stresses management (54.3%). At the same time, self-perception seems to be divided between management, social and leadership competencies and leaves a relatively large proportion to utterances not interpretable by competencies. The latter includes rather dramatic exaggerations such as "an NCO must be a God", "…an all-knowing wizard", "must do everything", "a mother to the conscripts", "like Mother Teresa", or "a magician". Between these role ambiguity issues, no clear expectations communicated, and the feeling of overwhelming workload, the situation seems to be worrying. It hints at the possibility of work-related stress or even burnout.[26]

Categories, competency groups	Results of job descriptions		Results from learning activities (self-perception)	
	Proportion of code counts	Codes, examples	Proportion of code counts	Codes, examples
Conceptual	0%		1,7%	Carries the main values of the defence force, sees the bigger picture, etc.
Leadership	2.5%	Supports, instructs, guides	15.2%	Being an example and a role model, teaches and leads the way, etc.
Management	54.3%	Controls, plans and coordinates, organizes, etc.	30.2%	Discipline, officer's help and replacement, etc.
Social	22.1%	Gives feedback, informs, etc.	24.7%	[social aspect of...] guiding, teaching, etc.
Technical (military professional)	16.8%	Documentation, resources, technical supervision, etc.	4.3%	Technical/professional specialist, dealing with equipment, etc.
Intrapersonal	1.8%	Training, obtains new skills, etc.	0.7%	Obtains experience, independent decisions and thinking, etc.
Not clear to interpret	2.5%	Other responsibilities and duties	23.2%	Mother, Father, Parent, does/knows/can do everything, God, Mother Teresa, a wizard, etc.

Table 1. The qualitative content analysis results comparing the official and self-perceived role descriptions according to the competency groups (Otsus, Säälik, 2021).

The study of NCOs' self-perception showed how the perceived and officially-stated role behaviours might differ and how identifying oneself in that role may reveal work stress and a feeling of overload or expectation towards that role being too high to fulfil. When the perceived need for competencies diverges from what the role description states and is probably not taught or developed during training, we cannot expect the people in that role to perform very well or enjoy well-being and work satisfaction. There is a need for more specific research on the concurrence of competencies involved in training and those needed for fulfilling one's role.

OFFICERS' IDENTITY, ROLE PERCEPTION, AND WORK-RELATED STRAINS

The study of officers' identity, role perceptions, and potential role conflicts revealed some indications of imbalance in personal and professional roles, possibly causing work-related stress and role conflicts. A qualitative research strategy was applied with data collection

based on learning activity, a questionnaire during master's degree studies at the academy, and follow-up interviews. In 2020–2021 experienced junior grade officers (mainly captains) first completed a learning activity about identity and role perception and self-analysis of one's characteristics, strengths, and weaknesses and further goals for self-development. Later in 2022, they were asked to participate in interviews. Participation in the survey was strictly voluntary, and the whole study process followed the ethics requirements stated by the grant of the Research Ethics Committee of the University of Tartu (No 337/T-3).[27]]

Both personal roles (e.g., father, husband) and professional roles (e.g., officer, leader, soldier) appeared in the self-perceptions of roles and identity. Yet, personal roles took a higher hierarchy of importance than professional ones (see Figure 2). There were several indications of role conflict and work-related strain. The interviewees found that their work-home commitment was off balance. The author identified the most critical components of professional identity development: openness to formal and informal communication (including reflection), supportive community (including commanders), and professional socialisation. The study also found that current annual attestations can potentially serve as a tool to develop officers' professional identity, but not at the moment. In general, the study demonstrated that officers see their heavy workload as a pervasive problem in their overall well-being and professional identity development.[28]

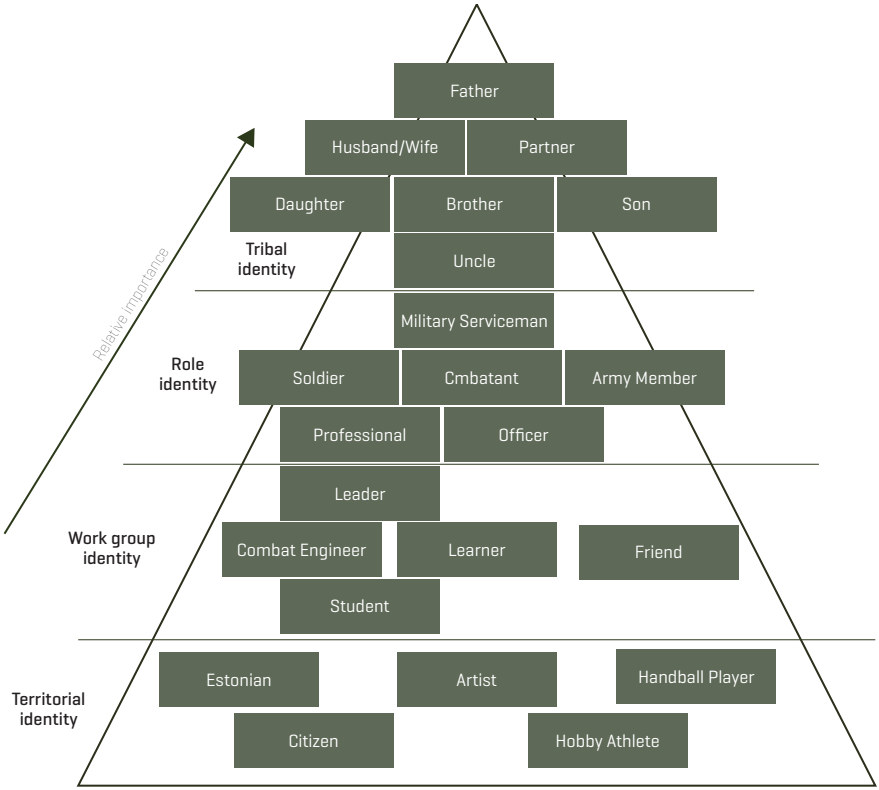


Figure 2. Examples of officers' roles and their relative importance (Möller, 2022)[29], based on role categories of collective identity by Ehala (2018).[30]

The sample group's junior officers (mainly captains) had family responsibilities and approximately 10–15 years of military experience. Whether the same patterns might appear among the young officers (lieutenants as platoon leaders) only starting their career has not been researched yet. In addition, the possible influence of age or generation affecting either individualistic or collectivistic values being 'me' rather than 'us' may need our attention.

INTERPRETATION OF AND COMPARISON WITH THE MILITARY LEADER'S ROLE THROUGH THE PRISM OF LEADER COMPETENCIES AS SEEN BY THE RESERVE PLATOON LEADER TRAINEES

Service in the Estonian Defence Force is based on conscription; every year, some conscripts are trained to be squad leaders or reserve platoon leaders. During a reserve platoon leader training course in 2020, 90 conscripts were asked to complete a learning

task about identity followed by self-analysis, including strengths and weaknesses related to their future role as military leaders. The pre-course and post-course self-analyses were studied using a qualitative content analysis based on the competence model. Participation was voluntary, and the data were processed anonymously without affecting the trainee.

The results of the qualitative content analysis revealed some significant differences in the military leader role perceptions seen through the prism of one's competencies. First seen as management mostly being done using communication skills (interpersonal competency), the follow-up analysis mostly presented ideas of intrapersonal competency needed for coping well in the role of a platoon leader. However, the course mainly consisted of technical and management issues with a small proportion of leadership skills, slightly introducing some reflection and self-analysis. The results of the content analysis are shown in table 2.[31]

Categories, competencies	pre-course		prost-course	
	N	%	N	%
Technical	0	0.0	11	1.8
Management	51	22.1	64	10.2
Leadership	36	15.6	82	13.1
Conceptual	27	11.7	34	5.4
Interpersonal	82	35.5	149	23.8
Intrapersonal	35	15.2	286	45.7
TOTAL	231		626	

Table 2. The perception of a military leader's role from reserve platoon leader trainees, comparing code-count competencies according to the content analysis of pre-course and post-course self-analyses.[32]

At the beginning of the course, the descriptions of leader competencies were expressed in plain terms of common knowledge about command or leadership (e.g., plans activities precisely and quickly, ensuring that the unit "works like clockwork"). In contrast, at the end of the course, more personal and lively descriptions referred to deeper understanding and even concerned inner searches. For example, the course participants have stated that "*...even if I happen to decide to be lazy and let the others do the hard work–soon*

it starts eating me from inside, then the feeling of shame that I let others do what I could do as well…", or "*All this 'bossing around' has made me more self-confident, but also critical… useful for further self-development…"*.

The change in the level of role description specification occurred as expected; this means that the organisation had delivered the meanings related to that reserve platoon leader's role during the course and that indications of role verification had taken place. In addition, some conformation of how the group members interpret the role appeared. According to Stets and Serpe (2013), "*the conformation of the group's interpretations as group members perceive situations similarly*," and this is considered useful for the internalisation of the role and alignment with the organisation to which the role belongs.[33]

In addition, some tension and insecurity appeared in post-course self-analyses; a lot of worries and weaknesses came out regarding decision making ("*I'm afraid I'll freeze when I have to make the decision…*") or relationships with others ("*how am I going to tell my comrades in the unit what to do?! Only a month ago I was the same conscript…" or "am I going to be accepted by the officers as a leader or commander, if in fact, I am not?"*). When young officers lack formal power and inner security, they may seek to compensate for this by publicly behaving in an over-distanced way toward the soldiers, which means that their professional identity as military officers is weakened.[34] In addition, signs of identity conflict or negotiation between two identities were noticed — a perceived intrapersonal tension, discrepancy, or interference between at least two identities — me as civilian or military personnel, and me as soldier/conscript or leader.[35]

ADAPTATION OF CURRICULA AND LEARNING TASKS IN THE ESTONIAN MILITARY ACADEMY

When the first attempts at identity clarification and self-analysis tasks were made in 2019–2020, using a learning activity describing self-image, including one's strengths and weaknesses, feedback from the learners differed rather drastically. Some found it eye-opening, while others refused to write down any weaknesses, stating that "*we are military, and militaries do not have any weaknesses*" or "*How do you expect a leader to reveal his weaknesses?! It demeans him in the eyes of his subordinates!*" Others were "surprised after the sessions, teaching of reflection and thorough self-analysis, that it actually truly revealed some aspects that had been either hidden or unknown" to the participant. Those statements led us to the idea of a need for change in the perception of leadership in the military — traditional 'tough guy' versus authentic contemporary leader. The new psychology of leadership sets shared social identity at the centre of leadership issues that initiates the followers' willingness to act in pursuing shared goals.[36] As stated by Northouse, authentic leadership, as one of the newest conceptions in this field, places

a strong emphasis on leaders' intrapersonal skilfulness and developmental perspective, with relational transparency and trust as drivers for followers to act and thrive at work, as well as for the leader to analyse themselves to continue improving in their role.[37] And that is what we should strive for.

As stated earlier, efficient development needs challenge, assessment, and support.[38] Therefore, it is necessary to design training so that those elements appear in formal training and informal occasions such as mentor discussions, etc. While developing the new curricula at the Estonian Military Academy in 2021, leader competency development and self-analysis aspects were added to the aims and learning outcomes. Furthermore, certain self-assessment and reflection tasks were put into practice. These reflection tasks will be kept at the forefront of the cadets' minds throughout their studies. The objective is to end up with a summative presentation of values, beliefs, strengths, and weaknesses as an officer and a military leader. This process needs more research, as early attempts show it is not easy for many to obtain intrapersonal skillfulness in searching for evidence about themselves. Even if one can do this, one must process and analyse their insights to make conscientious decisions about their development. Such decisions relate to which knowledge or skills still need improvement or what kind of attitude, values or motives either support or hinder role-taking in this organisation. Thus, we must work on individual skills and promote a more general belief in this approach among the people of the EDF. At the same time, we must follow and research its effect and continue to work on the concept as well as tools and measures.

Conclusions

There are indications of how understanding a military leader's role, assessing leader competencies, clarifying one's identity, and comparing it to the leader's role are interrelated. Helping learners at military academies must move towards a more intrinsic change and encourage learners to take responsibility for their own development. Thus, specific training tasks should include clarification of self-perception and a comparison to the expected traits of the future role communicated by the organisation and educators.

The learners at different levels of military training have expressed doubts and worries at first, but also surprise and admittance to the usefulness of the proposed competency assessment tools for reflection and self-analysis tasks during their courses. Indicating a lack of self-confidence and intrapersonal skill that needs to be addressed during training, it also hints that the military environment may not be the safest environment where making mistakes or accepting weaknesses is seen as a normality, and that attitude needs to change. As

the tool based on the MILTIC model has been tested on different levels of leaders with different roles, it has proved universally useful for self-development across the military leader's career levels. Considering that the Estonian Defence Forces are somewhat similar to many others and that they continuously align practices with NATO, our leader development practices are also expected to be usable for other countries. Whether there should be level-specific or role-specific model adaptations for more precise assessment still needs to be studied.

A military leader role model is needed, which would be simple enough to comprehend at different levels (conscripts, cadets, students, officers, etc.). It could be used for guidance during studies, as a tool for self-assessment, for giving feedback to colleagues and peers, and between the leader and subordinates. Yet, this should be evidence-based and scientific—based on the most recent studies in the field and adjusted to the respective organisation, its environment, and society. The concept of the military leader's role, including its necessary competencies, would benefit from collaboration and agreements from both within the military and outside of it with related parties, just like a doctrine in the Norwegian army.[39]

In conclusion, to achieve lifelong self-directed development of an officer's competencies and internal commitment to the officer profession, military academies must include goals and tasks in training that focus on self-awareness and promote a safe learning environment. Furthermore, it must be tolerant of mistakes and guide learners to exploit both success and failure for the sake of development as a habit and a skill. Also, the organisation can help clarify the officer's and leader's roles and identities by working on its concept and clearly communicating the expectations for the role while providing the necessary support throughout training events and an entire career.

Endnotes

[1] Todd Hertling, "The Officership Model: Exporting Leader Development to the Force," Military review 93 (2013): 33.
2 Wendy Darr and Elliot Loh, An Introduction to Advance in Military Personnel Selection, "Advances in Military Personnel Selection," NATO STO Technical Report TR-HFM-290 (May 2022): 1-1.
[3] Rino B. Johansen, Jon C. Laberg and Monica Martinussen, „Military Identity as Predictor of Perceived Military Competence and Skills," Armed Forces and Society Vol. 40(3) (2014), 521-543.
[4] Center for the Army Profession and Ethic (CAPE), An Army White Paper: The Profession of Arms (2010), 2.
[5] Leonard Karakowsky, Nadia C. DeGama and Kenneth McBey, "Facilitating the Pygmalion effect: The overlooked role of subordinate perceptions of the leader," Journal of Occupational and Organizational Psychology 85 (2012): 579-599. Lindsay M. Mallick, Mary M. Mitchell, Amy Millikan-Bell and M. Shayne Gallaway, "Small Unit Leader Perceptions of Managing Soldier Behavioral Health and Associated Factors," Military Psychology, 28:3 (2016), 147-161.
[6] Ülle Säälik, Aarne Ermus, Ivar Männamaa, Liisi Toom and Antek Kasemaa, Kaitseväelise juhi pädevusmudel (In Estonian. Military leader competency model). Sõjateadlane/ Estonian Journal of Military Studies, 14 (2020): 11–38.

[7] Sheldon Stryker and Peter J. Burke, "The Past, Present, and Future of an Identity Theory," Social Psychology Quarterly 63, no. 4 (2000): 284–97.
[8] Mary Bucholtz and Kira Hall, "Identity and Interaction: A Sociocultural Linguistic Approach," Discourse Studies 7, no. 4–5 (October 2005): 585–614.
[9] Robert B Ewen, An Introduction to Theories of Personality, 4th edition (New Jersey: Lawrence Erlbaub Associates, Publishers, 1993).
[10] Ronald L. Jackson (Ed.), Encyclopedia of Identity, Vol. 2. (SAGE Publications Inc., 2010): 648.
[11] Peter J. Burke and Jan E. Stets, Identity Theory, (Oxford University Press, 2009).
[12] Ibarra, Herminia, "Provisional Selves: Experimenting with Image and Identity in Professional Adaptation," Administrative Science Quarterly 44, no. 4 (1999): 764–91.
[13] Jüri Allik, Anu Realo and Ken Konstabel, Isiksuse psühholoogia (The psychology of personality), (Tartu: Tartu Ülikooli Kirjastus, 2003): 227–250.
[14] Robert B. Ewen, An Introduction to Theories of Personality, 4th edition. (New Jersey: Lawrence Erlbaub Associates, Publishers, 1993): 68–69.
[15] Rino B. Johansen, Jon C. Laberg and Monica Martinussen, "Military Identity as Predictor of Perceived Military Competence and Skills," Armed Forces and Society Vol. 40(3) (2014), 521–543.
[16] ibid,
[17] Mark R Leary and June Price Tangney, Handbook of Self and Identity, (New York; London: Guilford Press, 2012), 3–14.
[18] Ülle Säälik, Aarne Ermus, Ivar Månnamaa, Liisi Toom and Antek Kasemaa, Kaitseväelise juhi pädevusmudel (In Estonian. Military leader competency model). Sõjateadlane/ Estonian Journal of Military Studies, 14 (2020): 11–38.
[19] Ibid.
[20] Artur Meerits and Kurmet Kivipõld, Leadership competencies of first-level military leaders, Leadership & Organization Development Journal, Vol. 41, No. 8 (2020), 953–970.
[21] Daan van Knippenberg, Barbara van Knippenberg, David De Cremer and Michael A. Hogg, "Leadership, self, and identity: A review and research agenda," Leadership Quarterly 15 (2004): 825–856.
[22] Cynthia D. McCauley, Ellen Van Velsor and Marian N. Ruderman, "Introduction: Our View of Leadership Development," The Center for Creative Leadership Handbook of Leadership Development, (San Francisco: Jossey-Bass, 2004).
[23] David V. Day, Stephen J. Zaccaro and Stanley M. Halpin, Leader Development for Transforming Organizations: Growing Leaders for Tomorrow, (Mahwah N.J: Lawrence Erlbaum Associates, 2004).
[24] Tanel Otsus and Ülle Säälik, "Rollikonflikt ja rolli hägusus veeblite rollikäsitluses" (Role conflict and role ambiguity in the NCOs' role conception). Academia Militaris 3 (2021), 44–46.
[25] Ibid,
[26] Ibid.
[27] Marek Möller, „Ohvitseri professionaalne identiteet ja rollikonflikt" (In Estonian. Officer's Professional Identity and Role Conflict), Master's thesis, (The Estonian Military Academy, 2022).
[28] Ibid,
[29] Ibid,
[30] Martin Ehala, Identiteedimärgid. Ühtekuuluvuse anatoomia, (Signs of identity. The anatomy of esprit de corps.) (Tallinn: Künnimees OÜ, 2018): 120–121.
[31] Ülle Säälik and Antek Kasemaa, "The reserve platoon leader's perceptions of their role: critical leader's competencies," (Unpublished manuscript, 2022).
[32] Ibid,
[33] Jan E. Stets and Richard T. Serpe, "Identity Theory," In: J. DeLamater & A. Ward, Handbook of Social Psychology, (Springer Netherlands, 2013).
[34] Gerry Larsson, Paul T. Bartone, Miepke Bos-Bakx, Erna Danielsson, Ljubica Jelušič, Eva Johansson, Rene Moelker, Misa Sjöberg, Aida Vrbanjac, Jocelyn V. Bartone, George B. Forsythe, Andreas D. Prüfert and Mariusz Wachowicz, "Leader Development in Natural Context: A Grounded Theory Approach to Discovering How Military Leaders Grow," Military Psychology 18 (2006): S69 – S81.
[35] Janelle M. Jones, and Michaela Hynie, "Similarly Torn, Differentially Shorn? The Experience and Management of Conflict between Multiple Roles, Relationships, and Social Categories," Frontiers in Psychology 8 (2017): n. pag.
[36] Alexander Haslam, Stephen D. Reicher and Michael J. Platow, The New Psychology of Leadership. Identity, Influence and Power, (London and New York: Routledge, 2020).
[37] Peter G. Northouse, Leadership: theory and practice, 9th edition, (Thousand Oaks: SAGE Publishing, 2022).
[38] Cynthia D. McCauley, Ellen Van Velsor and Marian N. Ruderman, "Introduction: Our View of Leadership Development," The Center for Creative Leadership Handbook of Leadership Development, (San

Francisco: Jossey-Bass, 2004).
[39] Michael D. Johnson, Frederick P. Morgeson, Daniel R. Ilgen, Christopher J. Meyer, and James W. Lloyd. "Multiple Professional Identities: Examining Differences in Identification Across Work-Related Targets." Journal of Applied Psychology 91 (2) (2006): 498–506.

10

COMBINED ARMS WARFARE AS THE KEY TO SUCCESS ON THE CONTEMPORARY BATTLEFIELD?

TOM SIMOENS

- **Author:** Major Dr. Tom Simoens is an Associate Professor in History at the Royal Military Academy (Brussels), where he's also the Head of the Chair of History. He is a specialist in military history and military justice in the First World War. The evolution of Combined Arms Warfare in the 20th century is the main thread in one of the courses he teaches at the Academy. The views contained in this article are the author's alone and do not represent the views of Belgian Defence.

- **Abstract:** Combined Arms Warfare (CAW) is the extensive cooperation between different weapons systems and arms on land, supported by assets operating from the seas and in the sky. Modern CAW has its origins in the First World War. Since then, armed conflicts and wars have shown how difficult it is for elements of the land force systems to work together on the battlefield. We can see this today in Ukraine, where the Russian Armed Forces have failed to implement CAW. At the same time, the last century has shown that a properly applied CAW often leads to success on the battlefield. Therefore, this text emphasises the importance of CAW within any officer's training program, not only in the field of military history but also applied to leadership and critical thinking.

- **Problem statement:** Why does CAW remain a key concept in warfare, and what does this mean for the professional training of (future) officers?

- **Bottom-line-up-front:** Every future officer must know what CAW is, how the First and Second World Wars have shaped the concept and why it remains crucial, as the conflict in Ukraine in 2022 illustrates. Moreover, leaders of tomorrow must understand that this kind of warfare requires particular skills from junior and senior officers.

- **So what?** CAW is crucial for success on the battlefield. It must be part of the DNA of the armed forces. That DNA is being shaped early on by teaching the importance of CAW during the academic training of officer cadets. These cadets must also understand that their tactical leadership style will need to find a good balance between centralisation and decentralisation to be able to apply mission command, which is an essential enabler for effective CAW.

A Poor Performance in Combined Arms Warfare

The poor performance of the Russian Armed Forces in Ukraine shows once again that high-intensity land operations are incredibly complex undertakings. In the first weeks of the war, social media were awash with spectacular footage of exploding Russian tanks and armoured vehicles, often after being hit by anti-tank missiles such as the Javelin or NLAW. Instead of seeing this as the final bankruptcy of tanks[2], this text argues that a partial solution to the Russian tactical problems can be found in the proper implementation of CAW, being "*the synchronised and simultaneous application of arms to achieve an effect greater than if each element was used separately or sequentially*".[2] CAW has proved crucial in many wars and conflicts, both in classic operations—such as in Ukraine—and special operations, counter-insurgency, asymmetric warfare or low-intensity conflicts.[3] Electronic Warfare and synchronisation with the Combat Service Support—manning, arming, fixing, fueling, moving, and sustaining—are integral to it.[4] CAW is often a joint event—joint being an "*Adjective used to describe activities, operations and organisations in which elements of at least two services participate.*"[5] because it involves, more often than not, elements of air and/or navy forces who then generate effects to support the land forces.[6]

The importance of CAW for today's armies cannot be overstated. Nevertheless, in Ukraine (2022), especially in the campaign's first phase, Russian Land Forces failed to synchronise their weapon systems on the battlefield. Analysts have come up with some provisional explanations for this failure, even if the conflict is still very recent and thus hard to evaluate: political decisions about the timing and battle plan of the invasion, lack of warning and preparation, logistical problems and a shortage of manpower.[7] Even in the second phase of the invasion, in the Donbas region, the Russian interpretation of CAW has been relatively straightforward: "*Russia's approach to CAW was generally to hammer Ukrainian positions with artillery and other stand-off weapons and then to send armoured vehicles forward on a manoeuvre termed "reconnaissance to contact", designed to overwhelm what remained of Ukrainian defensive lines*".[8]

History as a Source of Inspiration[9]

CAW has a long and fascinating history.[10] Although it's a part of warfare since warfare exists, most military historians see the First World War as a turning point and a major change that laid the foundations for contemporary CAW, as Jonathan Bailey confirms with his definition of what he calls modern warfare: "*the advent of three-dimensional conflict through artillery indirect fire as the foundation of planning at the tactical, operational, and strategic levels of war*"[11] Throughout the 20th century, armies constantly had to adapt to the harsh realities of the battlefield, a highly competitive environment in which attack

and defence continuously tried to outdo each other with new weapons and tactics. During the First World War, the armies on the Western Front developed a basic concept for CAW for four years, as Jonathan Bailey points out. This process was complicated, but by 1918 all sides on the Western Front could break through enemy positions thanks to a CAW built around the infantry on foot.[12] The infantry had experienced real empowerment since 1914 with the generalisation of portable automatic firearms, hand and rifle grenades, light mortars, and even infantry cannons and flamethrowers. The infantry's mastery of tactical processes such as fire-and-movement or infiltration tactics allowed for a high level of performance. The artillery, now equipped with sufficient light and heavy guns, howitzers and mortars, with its effective rolling barrages, forced enemy soldiers to take cover as its own troops approached the enemy's positions, the engineers who cleared obstacles such as barbed wire and helped consolidate captured positions, the tanks, a wartime innovation of 1916, that attracted enemy fire and confronted enemy positions head-on, and the close air support planes, all assisted the infantry.[13] The infantry dictated the pace of operations, and the supporting arms adapted accordingly. CAW enabled the Allies on the Western Front to systematically break through the German lines in late 1918 using a bite and hold tactic: a breakthrough (bite) of 5 to 20 km in depth was always followed by a period of consolidation (hold). A few days or weeks later, a new bite would follow.[14]

Breaking through the enemy lines and immediately exploiting the gap by sending mobile forces tens of kilometres deep into enemy lines, taking advantage of the confusion and disarray, disrupting lines of communication, and attacking headquarters and logistical infrastructure, which turned out to be impossible in 1918. One of the main reasons for this was the poor technical performance of many tanks, which too often experienced breakdowns. Another important reason was the lack of motorised logistical transport that could follow the pace of the attacking infantry forces on foot. These shortcomings were largely eliminated during the Interwar period. In May 1940, the Germans stunned the world (and to a certain extent themselves) with a spectacular campaign against the Western powers through the Ardennes based on a new version of CAW. This time the Germans built their spearheads around the tank (instead of the infantry), which were brought together in groups of two to five armoured divisions. Dive-bombers gave fire support as flying artillery. Infantry, engineer, and artillery support was provided to these armoured spearheads, but soon after crossing the Meuse River on 13 May, they fell behind because they could not keep up with the Panzers' fast pace. In nine days, the Germans covered nearly 400 kilometres from the Western German borders to the Somme Estuary at Abbeville against a multinational force of French, British, Belgian, and Dutch units. However, the Germans also realised that their exploit in May 1940 was partly the result of a good dose of luck: the spectacular German success could have easily been turned into a tremendous failure if the

Allied forces had quicker understood the German battle plan and had bombed the massive traffic congestions in the Ardennes; if French or British counterattacking orders hadn't been delayed for several hours due to slow transmission chains and a very centralised command; if the German field commanders hadn't disobeyed some earlier orders to halt their advance and instead kept pushing to the Meuse river; or if some bridging elements at Sedan had broken down (there were no spares available).[15] Thus, German CAW became more balanced after that first year of the war, emphasising the critical role of infantry and artillery and the ubiquitous tanks instead of privileging only the tank. This was later reinforced by the emergence of increasingly better and more numerous anti-tank weapons (cannons, tank destroyers, and anti-tank rocket launchers such as the Bazooka or the Panzerfaust), making tanks more vulnerable.[16]

This more balanced CAW, looking for a flexible and balanced use of infantry, tanks and artillery, was never fundamentally challenged after 1945, despite the appearance of new weapon systems such as armoured personnel carriers and infantry fighting vehicles, helicopters, anti-tank missiles, shoulder-fired anti-aircraft missiles, precision-guided munitions or drones. In South Vietnam, a war primarily associated with infantry patrols and helicopters, CAW gave the best chance for success, at least for the Australian units serving in the country. A study of the use of these units in engagements with prepared Vietcong defensive (bunker) positions found that Australian ripostes carried out by infantry, supported by tanks and artillery and with possible air support, were by far the most successful and limited their losses, despite the jungle environment and the often very short distances over which the fighting took place. The researchers were clear: "*The combination of infantry, armour (particularly heavy armour), air strike and artillery was a potent and flexible instrument. Moreover, it was an instrument that rarely failed to seize its objectives with a success rate of 95 per cent*".[17] The Israelis also demonstrated how vital CAW is for military success in the various wars and conflicts in which they were involved. However, they failed a few times in CAW and were punished each time. After the stunning Israeli victory in the Six-Day War in 1967, for example, the Israelis neglected their CAW doctrine, convinced that a combination of tanks alone (without supporting infantry, engineers or artillery) supported by planes would do the next job, as they had shown with their spectacular successes during this Six-Day War in the Sinai, the West Bank, and the Golan Heights.[18] Six years later, however, during the Yom Kippur War, Israeli tanks, unprotected by artillery or infantry, initially fared poorly against Soviet-made Egyptian anti-tank missiles and RPGs.[19] Yet, the Israelis adapted and recovered, and in doing so, dealt the Egyptians and Syrians a heavy blow. Of course, the Israelis were aided by the Egyptian decision to continue attacking beyond their initial objectives. However, we must acknowledge that the Israelis had seen the error of their ways and adapted their CAW approach accordingly; Barno and Bensahel note that

"*Less than a week into the war, Israeli commanders decided to restore their combined-arms doctrine, and began to quickly reorganise their armoured units into such formations. Mechanised infantry, engineers, and self-propelled artillery were integrated into formerly all-tank formations before the next series of IDF offensive operations began*".[20]

We can also ask ourselves whether Western armies today are not falling into the same trap by fixating on air power and special forces as the ready-made solution to every military challenge. The battles in Afghanistan after 9/11 were a first reality check in that respect: "As *a result, advanced armies are busy revalidating the art of combined arms warfare*".[21]

The Russians rediscovered the importance of CAW during the conflict in Chechnya. In the First Chechen War (1994-1996), the Chechens successfully assembled teams of three or four fighters, consisting of an RPG gunner, a machine gunner, and a sniper, who circled the Russian formations in the capital Grozny like wolf packs. They inflicted 800 losses on the Russian Maykop Brigade on 1 January 1995, taking out 102 of 120 BMPs and 20 of 26 tanks.[22] The Russians adapted, however, and in the Second Chechen War (1999-2009), they used "troika fire teams" with a sniper, a machine gunner and a grenade launcher, supported by two supply men, to protect their armoured vehicles.[23] After the First Chechen War, the Russians had learned their lesson: "*Despite some problems, the Russian armed forces [in the Second Chechen War] showed proficiency in combined arms operations*."[24] A Russian infantry company commander would often be given an artillery or mortar battery under his direct command.[25] This is also a trend since the Second World War: combined arms units are increasingly found at the lower echelon. During the Second World War, an American platoon of tank destroyers consisted not only of tank destroyers but also of an infantry section for close protection and an anti-aircraft section, quite a challenge for a platoon commander.[26] The Russian BTGs are also a good illustration of that, just like the current Franco-Belgian land forces collaboration (CaMo – Capacité Motorisé) with the development of the company-level modular unit, SGTIA-S (sous-groupement tactique interarmes – scorpion), composed of all necessary weapons systems necessary to fulfil its mission from different arms (branches) and even services/forces (e.g. air assets).[27] CAW is, therefore, increasingly a matter of junior leaders. Finally, the US also rediscovered the value of CAW teams in urban combat with, for example, the so-called "Thunder Runs" during Iraqi Freedom in 2003: tanks turned out to be worth their weight in gold in urban environments (Najaf, Baghdad), provided that they were used judiciously in combination with light infantry, and provided that the tanks were able to withstand some damage ("survivability").[28]

The Key Elements of CAW

To successfully engage in CAW, some elements are essential. First, an army must have the necessary weapons systems with personnel, ammunition, and spare parts. A commander simply cannot have tanks and infantry working together under the protective umbrella of artillery projectiles and protected from air threats thanks to shoulder-fired anti-aircraft missiles if his armed forces don't dispose of these weapons systems. This is the case for Belgian Land Forces in 2022: the Belgian Army got rid of its Leopard 1 A5 tanks (2014) and has no longer Air Defense system operational.

These weapons systems must be suitable (in quality) and available in sufficient numbers (quantity). In the case of the Russian operations in Ukraine, the ordinary mortal might too quickly conclude that the Russian losses were mainly due to old weapon systems. However, the Iraqis also used many (not all) of these same types of vehicles in the Gulf War (Desert Storm, 1991), albeit often downgraded and less well-equipped than the original Soviet versions. In the Battle of 73 Easting, Iraqi forces indeed suffered a crushing defeat: 9 American M1 Abrams and 12 M3 Bradleys destroyed no less than 37 Iraqi T72s and 32 armoured vehicles in just 40 minutes, with no significant losses of their own. Later computer simulations, however, in which the Iraqis did apply modern combat tactics (CAW), seem to indicate that the US dominance, in that case, would have been less significant. The US forces still came out on top, but notionally the Iraqis took out 50 American vehicles.[29] This suggests again that CAW is a force multiplier: an army with proper CAW that is poorly equipped or equipped with less modern weapon systems, can be more capable on the battlefield despite a material disadvantage.

Furthermore, an armed force must develop the doctrines and field manuals necessary to put the weapons systems to work. The Russian tactical prescriptions read rather modern, building, among others, on the Soviet tradition of the deep battle, with penetrations deep into enemy lines. The Russian Armed Forces today strive to manoeuvre with tactical prescriptions that look pretty Western.[30] Since the August 2008 Five-Day War in Georgia, the Russians had realised that their CAW was still ineffective and started major reforms, apparently without much success.[31]

CAW also stands or falls with how an army builds and structures its units. The Russian BTGs (Batallion Tactical Group), high-readiness units with a strength of 800 to 900 soldiers, composed of tanks, infantry, artillery, drones, air defence, electronic warfare, logistics and other units, are on paper excellent combined arms units that a priori will perform a specific task for a higher echelon (brigade), such as vanguard or flank guard.[32] The US Army simultaneously developed the concept of BCTs (Brigade Combat Team), combined arms units

of some 3,000 men built around infantry, tanks or Strykers, although the last few years[33], accelerated by recent events in Ukraine in 2022, have seen a switch, turning divisional and corps level into the "Army's wartime formation of choice".[34] In 2014, the performance of the BTGs in the Donbas impressed Western observers.[35] However, BTGs are intended for executing one specific mission for the upper echelon, whereas in Ukraine (2022), they were mainly used as independent elements without an upper echelon. Moreover, many troops were missing at roll call, especially mounted infantry.[36] The BTGs didn't apply their tactical prescriptions that theoretically should have implied manoeuvre warfare, breakthrough and exploitation, deep battle and fixing-and-flanking.

The latter can then instead be explained by the other elements of the classical DOT-MLPF (Doctrine, Organisation, Training, Materiel, Leadership and Education, Personnel, and Facilities): good morale and motivated soldiers, leadership from corporals and sergeants to generals, a corporate culture based on mission command, high-performance transmission assets, adequate logistical support and good training centres and facilities. This is where the shoe pinches for the Russian units fighting in Ukraine. CAW, for instance, requires intensive and continuous training.

To underscore how crucial realistic training is, the British Army recently organised an urban training in which an infantry platoon physically combed a building while virtually a drone, a sniper, a mortar unit, and an Apache helicopter secured the area. An infantry platoon commander had to lead his soldiers into the building and, in doing so, received input from his virtual assets. To add verisimilitude, actors were also placed in the building. So, for example, when the (virtual) sniper shot an enemy in the building, an actor playing the virtual sniper's victim physically went down in the building. When the Apache flew over to provide close air support, the sound of its engines blared through loudspeakers in the building. The debriefing afterwards allowed all stakeholders to discuss what had gone right or wrong immediately.[37]

In addition to training, mission command is essential for putting CAW into practice on a tactical level. For the Belgian Armed Forces, mission command is the "fundamental command philosophy throughout Belgian Defence; commanders at different levels give direction by stating what is to be achieved and why. Within this framework, subordinates are then given the freedom to execute the task as they think best. This philosophy leaves room for disciplined initiative at all levels"[38]. However, a study showed that there is still work to be done in the Belgian Armed Forces to integrate the concept into the tactical manuals and training methods.[39] This is even more urgent, given that analysts suggest that next-generation warfare on land will look much more like war at sea or in the skies

because they will be fought at increasingly greater distances in dispersed formations.[40] A study in 2012 suggests that mission command remains relevant, even on the "modern, information-heavy battlefield".[41]

Easier Said Than Done

History shows, on the one hand, how vital CAW is, but on the other hand, it also teaches us that it is not easy to put into practice.

First, CAW becomes more complex with each new capability that needs to be integrated. Since World War II, the standard arsenal of a fighting force has been expanded to include anti-tank missiles, helicopters, shoulder-fired anti-aircraft missiles, infantry fighting vehicles, electronic warfare, drones and countermeasures against drones or precision-guided munitions. The more weapon systems that have to be synchronised, the more complex the planning process becomes and the faster things can go wrong. What doesn't help is the fact that armies are traditionally conservative bulwarks[42], with generals who select successors who think and work in the same way as they do (sometimes referred to as "ducks pick ducks")[43] and in which groupthink, social conformism, institutional immobility and resistance to change are often dominant.[44] Armed forces are made not to change: "the absence of innovation is the rule, the natural state".[45] Thinking out-of-the-box to embrace innovations and integrate them into CAW is thus not an easy task, as history has repeatedly made clear. So too often, the military learns the hard way: only after an initial series of failures do they slowly (and sometimes reluctantly) adapt to the new reality.[46] This appreciation also applies to CAW.

In addition, CAW is an expensive investment in peacetime. It is easier to organise and station units per weapon type. Each branch (infantry, armoured, engineers…) has its own specific needs in terms of logistical and training facilities. Although from a financial point of view, it is rational to centralise units of the same type on one platform as much as possible (e.g. creating a base where all armoured units are stationed and another base where all infantry units are grouped etc.), from a military point of view this is detrimental to CAW training. Sometimes the opposite also happens, with potentially the same disastrous consequences on CAW: battalions belonging to the same brigade are spread out over the entire country, physically separating them from one another. Sometimes army branches claim to be so specific or technical that their units are better organised as independent units rather than integrated into the larger unit to which they belong. Engineering or signals capabilities are sometimes kept apart for these reasons. From a CAW perspective, this is, again, a bad idea.

Moreover, the purchase of weapons systems is subject to political restrictions. One or more political parties can veto the acquisition of weapons systems. Recently the Belgian government refused to arm its three newest drones. According to declarations in the media, armed drones were reportedly unacceptable for at least two political parties in the Belgian government who associated these weapons with the targeted killings (and collateral damage) of the US armed forces throughout the world.[47]

CAW is also a tough challenge for personnel training. A commander with tanks, infantry, drones, anti-aircraft guns and engineering troops at his disposal may better have had training on their use, means and tactics. Training with different weapon systems and different units is expensive because of the large number of troops involved and because it often requires moving to training zones abroad. Moreover, the training takes up an entire unit for a longer period of time, which means that other activities of this unit have to be suspended.

Furthermore, the span of control within a military hierarchy is limited: as a commander, one can only manage a limited number of sub-units without losing the overview. Usually, we assume two to five direct subordinates, with a maximum of seven.[48]

Successful implementation of CAW must therefore overcome these obstacles. This means that we have to insist evermore on the importance of the concept by integrating it into doctrinal documents, applying it as early as possible in professional military education or training, and teaching the historical relevance of the concept as soon as possible to future officers. Nevertheless, explaining and demonstrating the importance of the concept is not enough. Training is perhaps even more crucial. It must take place at all levels. If not, CAW expertise will be quickly lost: "*While having high technology weaponry and sound tactical doctrine are certainly important, unless armies conduct large scale combined arms training on a regular basis they will quickly lose proficiency in how to plan and synchronise tactical operations*".[49]

Increasing urbanisation further poses a challenge. By 2030, up to 60% of the world's population will live in cities.[50] Militaries of the future must not shun urban struggle but embrace it and seek solutions. Part of the solution to this urban warfare lies once again with CAW.[51] Indeed, the Modern War Institute notes from the case study of Stalingrad (1942-1943) that: "The importance of combined arms in urban operations was clearly one of the most important lessons demonstrated" and that "Combined arms teams—armour, infantry, engineers, and fires from artillery and mortars—must be trained together to achieve the high level of cooperation, teamwork, and tactical capability required by high-intensity combat in dense urban terrain".[52]

Finally, deterrence is not just a nuclear story. Credible conventional forces are also part of the measures that must deter a potential enemy from attacking us. Air power and special operations forces alone will not suffice: the (threat of the) use of conventional land forces will always be needed.[53] The credibility of an army therefore stands or falls with the CAW capabilities of its units. The importance of CAW is not just a lesson from the past, but it is also the way forward for the future: "Success in modern conventional warfare is determined by a combination of effort, environment and – to an extent – luck. However, the most important determinants of victory are the actions of combined arms units. Only these units, in cooperation with other branches of arms and other military services, can perform the full spectrum of defensive and offensive tasks".[54]

CAW in Basic Military Officers' Training

It is evident that the basic training of future officers is mainly about learning the ABC of basic military skills, such as camouflage and individual tactics. Yet the concept of CAW is so crucial that candidate officers should be introduced to it as early as possible. This can be done in a course on military history, but also in courses on land operations, and even during military training. It is vital to show why CAW is important, using case studies, and at the same time to remain aware of why armed forces have failed to apply CAW in the past.

In addition, as already noted earlier, mission command is a crucial component in executing CAW on the battlefield. Mission command can be defined as a "Prusso-German command philosophy that emphasises decentralisation, commander's intent, and low-level initiative".[55] A lower officer can take the initiative if he respects the commander's intent. That's why many handbooks use the wording "disciplined initiative" to describe mission command.[56]This command style is thus different from what officers traditionally learn (or learned) to do in many armed forces: executing a detailed order without much thought, often with a chief who micromanages and keeps a close eye on his subordinates. The latter, a highly centralised command and control, is often the result of a lack of trust in their subordinates, the fact that they have difficulty dealing with the uncertainty of decentralisation, and that they are risk-averse.[57] At the same time, mission command offers an answer to the chaos of the battlefield: junior officers and NCOs who get more control over more assets and can develop their manoeuvre will better understand the story they are playing in and will more quickly recognise and exploit opportunities and eventually will become more effective and efficient. Yet decentralisation is not a magic formula either: for some complex operations (such as a river crossing), a centralised manoeuvre is often the best approach because there are so many assets to coordinate. Some, therefore, argue for alternating and flexible switching during operations between mission command on the one hand (with decentralisation of decision-making power and much

freedom for the lower executive echelons) and more centralised command and control on the other.[58] Young officers must therefore understand that leadership means that their tactical superiors (battalion commanders, brigade commanders) will sometimes give them orders in which they themselves have little freedom to fill.

In contrast, a day later, they will be given great freedom to fill in their assignment in the same exercise or operation. This mindset is best inculcated as soon as possible, and this can be done during the training of platoon commanders, which in Belgium is already partly done at the Royal Military Academy. During their academic semesters (for instance, the organisation of socio-cultural activities) and military training camps (tactical training up to platoon commander), Belgian cadets are given an assignment without being told how to fulfil it, but always in a clearly formulated commander's intent. It's then up to the cadets to determine how they will achieve the objective. After each mission, a debriefing occurs where all decisions taken (or not taken) by the cadets are evaluated and openly discussed.

One final aspect of the training of future officers is the importance of critical thinking in the academic curriculum. Unlike the traditional or rather old-school view on commanding (i.e. you get an order and execute it without consideration), critical thinking is complementary to a military organisation based on formal command structures.[59] Certainly, officer cadets must understand when (and even more importantly, when not) to challenge the ideas of their superiors. But it certainly doesn't hurt to question stubborn traditions and habits to break down conservatism and stimulate an open innovation culture within the organisation. Young officers must also be sufficiently trained during their academic and professional training to process information quickly. Critical thinking will help them to analyse and evaluate arguments used by others and to compose their own thoughts in a structured argument. They also must learn to make decisions based on solid arguments and not just on a gut feeling. They must be willing and prepared to show the intellectual courage to challenge old ideas ("we have always done things like this") and to think out of the box to come up with creative and adaptive solutions to old and new problems. Apart from intellectual courage, future officers should dispose of many other traits of a disciplined mind, such as intellectual autonomy, intellectual integrity, intellectual perseverance or intellectual empathy.[60] For no matter how well a country prepares the next war and how excellent it trains its future officers for CAW, adaptation in wartime will always be necessary. As David Barno and Nora Bensahel convincingly demonstrated, "*Strong and adaptive leaders can overcome problems with doctrine and technology, but weak and inflexible leaders can undermine even the best examples of each. For this reason, developing adaptive leaders in peacetime, who are ready to adjust to the always unpredictable demands of war, may be one of the most important objectives of any military.*"[61]

Endnotes

[1] Rob Lee, "The tank is not obsolete, and other observations about the future of combat," War on the rocks, Texas National Security Review, published on September 06, 2022, https://warontherocks.com/2022/09/the-tank-is-not-obsolete-and-other-observations-about-the-future-of-combat/.
[2] ADP 3-0. Operations, Washington, Department of the Army, July 31, 2019, 3-9.
[3] See for instance the analysis by David Rodman, Combined Arms Warfare in Israeli Military History. From the War of Independence to Operation Protective Edge (Brighton: Sussex University Press, 2019).
[4] James W. Reed, "Combined Arms Warfare in the 21st Century: Maximizing the capability of U.S. Army Future Combat System Equipped Brigade Combat Teams to Conduct Combined Arms Operations" (Master Thesis, Fort Leavenworth, 2008), 12-17.
[5] AAP-06. NATO Glossary of terms and definitions (English and French), NATO NSA, 2013.
6 ADP 3-0. Operations, Washington, Department of the Army, July 31, 2019, v and 1-5.
[7] Rob Lee, "The tank is not obsolete, and other observations about the future of combat," War on the rocks, Texas National Security Review, published on September 06, 2022, https://warontherocks.com/2022/09/the-tank-is-not-obsolete-and-other-observations-about-the-future-of-combat/.
[8] Seth G. Jones, "Russia's ill-fated invasion of Ukraine: Lessons in Modern Warfare," csis.org (June 1, 2022) https://www.csis.org/analysis/russias-ill-fated-invasion-ukraine-lessons-modern-warfare.
[9] On the use and abuse of military history by military professionals, please read Michael Howard, "The Use and Abuse of Military History," Parameters (11, no. 1, 1981), 9-14.
[10] Jonathan House, Combined Arms Warfare in the Twentieth Century (Kansas: Kansas University Press, 2001).
[11] Jonathan Bailey, "The First World War and the Birth of modern Warfare," MacGregor Knox and Williamson Murray, The dynamics of military revolution 1300-2050 (Cambridge, Cambridge University Press, 2002), 132.
[12] This statement is based on the observation that (1) the Germans broke through the frontlines in Spring 1918 (but failed to exploit) and (2) all Allied forces, even the Belgians, did the same in the Hundred Days Offensive (from August-September 1918 on).
[13] James W. Reed, "Combined Arms Warfare in the 21st Century: Maximizing the capability of U.S. Army Future Combat System Equipped Brigade Combat Teams to Conduct Combined Arms Operations" (Master Thesis, Fort Leavenworth, 2008), 39.
[14] Franky Bostyn, Luc De Vos and Tom Simoens, "From a war of men to a war of machines," Henri Dupuis, Krzysztof Pomian and Isabelle Van Den Broeke (eds.): 14-18, it's our history! (s.n., s.l., 2014), 25-40.
[15] Karl-Heinz Frieser, The Blitzkrieg Legend. The 1940 Campaign in the West (Naval Institute Press, 2013).
[16] James W. Reed, "Combined Arms Warfare in the 21st Century: Maximizing the capability of U.S. Army Future Combat System Equipped Brigade Combat Teams to Conduct Combined Arms Operations" (Master Thesis, Fort Leavenworth, 2008), 51-63.
[17] Robert Hall and Andrew Ross, "Lessons from Vietnam. Combined Arms Assault against Prepared Defenses," Michael Evans and Alan Ryan, From Breitenfeld to Baghdad. Perspectives on Combined Arms Warfare (Land Warfare Studies Centre, Working paper n° 122, 2003), 42.
[18] David Barno and Nora Bensahel, Adaptation under Fire. How militaries change in wartime (New York, Oxford University Press, 2020).
[19] David Rodman, Combined Arms Warfare in Israeli Military History. From the War of Independence to Operation Protective Edge (Brighton, Sussex University Press, 2019).
[20] David Barno and Nora Bensahel, Adaptation under Fire. How militaries change in wartime (New York, Oxford University Press, 2020).
[21] Michael Evans, "General Monash's Orchestra. Reaffirming Combined Arms Warfare," Michael Evans and Alan Ryan, From Breitenfeld to Baghdad. Perspectives on Combined Arms Warfare (Land Warfare Studies Centre, Working paper n° 122, 2003), 21-22. One might argue that at least in the first years of the military intervention in Afghanistan (2001-2005), operations were much more like peacekeeping operations than counter-insurgency or large-scale combat operations. However, this highlights one of the main topics of this paper, namely that CAW is not only a concept that applies to heavy mechanized forces in large-scale combat operations, but even peacekeeping operations require expertise in CAW at certain moments.
[22] Martin Andrew, "The Russian experience of Urban combat. Some lessons from Central Asia," Australian Army Journal (Volume 1, Nr 2), 164-165. See also: James A. Copp, The Russian Way of War: Post Soviet Adaptations in the Russian Military and Why The Russian Military Failed in Chechnya. Putin, Grozny, Chechen and Georgian War, South Ossetia, Abkhazia (Progressive Management, Smashwords Edition, 2014).

[23] Martin Andrew, "The Russian experience of Urban combat. Some lessons from Central Asia," Australian Army Journal (December 2003), 165.
[24] Olga Oliker, Russia's Chechen Wars 1994-2000. Lessons from Urban Combat (Arlington: RAND, 2001), 84.
[2] Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," Military Review (July-August 2000).
[26] Jonathan House, Combined Arms Warfare in the Twentieth Century. Kansas, Kansas University Press, 2001. See also: "Tank destroyer battalion (United States)," Wikipedia, last modified on June 08, 2022, https://en.wikipedia.org/wiki/Tank_destroyer_battalion_(United_States).
[27] Manuel provisoire d'emploi du sous-groupement tactique interarmes Scorpion (Ministère des Armées, 1st edition, PFT 3.2.01/5, 2021), 15 notes: "Le SGTIA-S est constitué avec tous les moyens interarmes, voire interarmées (...), nécessaires à l'accomplissement de ses missions". Scorpion stands for "Synergie du COntact Renforcée par la Polyvalence et l'InfovalorisatiON."
[28] Alan Ryan, "Combined Arms Cooperation in the Assault. Historical and Contemporary Perspectives," Michael Evans and Alan Ryan, From Breitenfeld to Baghdad. Perspectives on Combined Arms Warfare (Land Warfare Studies Centre, Working paper n° 122, 2003), 53-63.
[29] Stephen Biddle, Military Power. Explaining Victory and Defeat in Modern Battle (Princeton: Princeton University Press, 2006), 134.
[30] Lester W. Grau and Charles K. Bartles, The Russian Way of War. Force Structure, Tactics, and Modernization of the Russian Ground Forces (Kansas: Foreign Military Studies Office, 2017).
[31] Lionel Beehner, Liam Collins, Steve Ferenzi et.al., Analyzing the Russian Way of War. Evidence from the 2008 Conflict with Georgia (West Point: Modern War Institute, 2018).
[32] Seth G. Jones, "Russia's ill-fated invasion of Ukraine: Lessons in Modern Warfare," csis.org, published on June 01, 2022, https://www.csis.org/analysis/russias-ill-fated-invasion-ukraine-lessons-modern-warfare and Lester W. Grau and Charles K. Bartles, "Getting to Know the Russian Battalion Tactical Group," published on April 14, 2022, https://www.rusi.org/explore-our-research/publications/commentary/getting-know-russian-battalion-tactical-group.
[33] Michael D. Lundy, "Meeting the Challenge of Large-Scale Combat Operations Today and Tomorrow," Military Review Special Edition (September-October 2018), 111-118.
[34] Adam Davis, The Brigade Combat Team (BCT): A Revolution in Organizational Structure (Muskie School of Public Service Capstone Paper, 2020). However, as noted in the text, the US Army does not neglect the divisional and corps level. After nearly two decades of mainly COIN operations, the general feeling was that these divisional and corps levels had to be revalued. That's why (among other decisions) professional military training for US Army officers has now shifted its focus back on divisional and corps level. However, this didn't have a large impact on the BCT's yet, which are still regarded as more flexible than complete divisions (e.g., lower logistical footprint). For the quote: Caitlin M. Kenney, "Divisions, Corps to Replace Brigades As Army's Wartime Formation of Choice," in: Defense One (October 10, 2022) https://www.defenseone.com/policy/2022/10/divisions-corps-replace-brigades-armys-wartime-formation-choice/378234/.
[35] Amos C. Fox and Andrew J. Rossow, Making Sense of Russian Hybrid Warfare: A Brief Assessment of the Russo-Ukrainian War (Arlington: The Institute of Land Warfare, The Land Warfare Papers, 112, 2017).
[36] Michael Kofman and Rob Lee, "Not built for purpose: the Russian Military's Ill-fated force design," War on the rocks, Texas National Security Review, published on June 02, 2022, https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design/.
[37] John Spencer and Rob Taylor, "A New Way of Combined Arms Urban Warfare Training" (podcast by Urban Warfare Project, May 27, 2022).
[38] Belgian Defence Doctrine. Fundamental Principles to Approach Belgian Defence Operations, Brussels, 2022 (TBC: this new doctrine was still to be published at the time of writing this essay), 76-77.
[39] Jean-Charles Defawes, "Mission Command à la Composante Terre: "Lip-Service"?" (Research paper, Royal Military Academy/Defence College, 2019).
[40] Steven Yeadon, "A New Combined-Arms Approach for the Armored Brigade Combat Team" (s.n., s.l., 2020), retrieved from: https://www.benning.army.mil/armor/eARMOR/content/issues/2020/Summer/3Yeadon20.pdf and Jeroen Verhaeghe, "Het slagveld van de toekomst", Belgisch Militair Tijdschrift (June 2022), 90.
[41] Michael J. Gunther, "Auftragstaktik: the Basis for Modern Military Command?" (Kansas: Fort Leavenworth, 2012), 52-54.
[42] Ibid., 49.
[43] Adam Davis, The Brigade Combat Team (BCT): A Revolution in Organizational Structure (Muskie School of Public Service, Capstone Paper, 2020), 19 and 64-65.

[44] Danic Parenteau, "Teaching Professional Use of Critical Thinking to Officer-Cadets. Reflection on the Intellectual Training of Young Officers at Military Academies," Journal of Military Learning (April 2021), 47-56.
[45] Paul E. Snyder, "Revolution or Evolution? Combined Arms Warfare in the Twenty-First Century" (Master Thesis, Fort Leavenworth, 1999), 7-8.
[46] David Barno and Nora Bensahel, Adaptation under Fire. How Militaries Change in Wartime (New York: Oxford University Press, 2020).
[47] Jens Franssen, "Worden er bommen gehangen aan nieuwe drones van Belgische leger of niet? Kwestie leidt tot politieke discussie," published on April 27, 2022, https://www.vrt.be/vrtnws/nl/2022/04/26/n-va-wil-belgische-nieuwe-drones-bewapenen-regering-is-tegen/.
[48] Adam Davis, The Brigade Combat Team (BCT): A Revolution in Organizational Structure (Muskie School of Public Service, Capstone Paper, 2020), 61-62.
[49] James W. Reed, "Combined Arms Warfare in the 21st Century: Maximizing the capability of U.S. Army Future Combat System Equipped Brigade Combat Teams to Conduct Combined Arms Operations" (Master Thesis, Fort Leavenworth, 2008), 75.
[50] David Rodman, Combined Arms Warfare in Israeli Military History. From the War of Independence to Operation Protective Edge (Brighton: Sussex University Press, 2019) and David Barno and Nora Bensahel, Adaptation under Fire. How militaries change in wartime (New York: Oxford University Press, 2020).
[51] Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," Military Review (July-August 2000).
[52] John Spencer and Jayson Geroux, "Case Study #1 – Stalingrad," August 06, 2021, retrieved from: https://mwi.usma.edu/urban-warfare-project-case-study-1-battle-of-stalingrad/.
[53] Sam Cranny-Evans and Sidharth Kaushal, "The Intellectual Failures Behind Russia's Bungled Invasion," published on April 01, 2022, https://www.rusi.org/explore-our-research/publications/commentary/intellectual-failures-behind-russias-bungled-invasion.
[54] Lester W. Grau and Charles K. Bartles, "Getting to Know the Russian Battalion Tactical Group," www.rusi.org, published on April 14, 2022, https://rusi.org/explore-our-research/publications/commentary/getting-know-russian-battalion-tactical-group.
[55] Trent J. Lythgoe, "Beyond Auftragstaktik. The Case against Hyper-Decentralized Command", Joint Force Quarterly, 2020 (1), 29-36.
[56] Michael J. Gunther, "Auftragstaktik: the Basis for Modern Military Command?" (Kansas: Fort Leavenworth, 2012), 14; Trent J. Lythgoe, "Beyond Auftragstaktik. The Case against Hyper-Decentralized Command", Joint Force Quarterly, 2020 (1), 36 and ADP 6-0. Mission Command. Command and control of Army Forces, Department of the Army, 2019, p. 23.
[57] Trent J. Lythgoe, "Beyond Auftragstaktik. The Case against Hyper-Decentralized Command", Joint Force Quarterly, 2020 (1), 30.
[58] Ibid., 29-36.
[59] Danic Parenteau, "Teaching Professional Use of Critical Thinking to Officer-Cadets. Reflection on the Intellectual Training of Young Officers at Military Academies", Journal of Military Learning (April 2021), 47-56.
[60] Richard W. Paul and Linda Elder, Critical Thinking. Tools for Taking Charge of Your Professional and Personal Life (New Jersey: Pearson Education, 2002).
[61] David Barno and Nora Bensahel, Adaptation under Fire. How Militaries Change in Wartime (New York: Oxford University Press, 2020).

11

IMPROVING EFFICIENCY THROUGH DATA-DRIVEN DECISION MAKING IN A MILITARY ENVIRONMENT

ALEXANDER TREIBLMAIER

- **Author:** Lieutenant Colonel Alexander Treiblmaier; Research interest: Impact of technological developments on leadership in the military environment. The views contained in this article are the author's alone and do not represent the views of the Austrian MOD.

- **Abstract:** In today's world, the challenge for military leaders is not the lack of data or information, but the management of a large amount of data and information. Due to the diversity and complexity, this quantity of data or information often cannot be evaluated by the commander and his staff with the required quality and within the time available for decision-making. The solution is not to rely more on current information and communication technology, but to seek a new and holistic approach. This approach includes a dedicated organisational strategy that is centered around a data-driven corporate culture, a comprehensive information and knowledge management system, and awareness of the chances and challenges with respect to the implementation of [semi]-automated data analysis and decision-making.

- **Problem statement:** What is data-driven decision-making, and what is necessary to consider for deployment in the military environment?

- **Bottom-line-up-front:** Due to the special challenges in the military environment, it is necessary to implement capabilities and processes at various levels and in different areas. In addition to the strategic military command level, these levels include the areas of training and research and development. Only holistic and forward-looking planning can lead to success with respect to the existing complexity in the military domain.

- **So what?** The introduction of data-driven decision-making in the military requires a holistic strategy to synchronize objectives and resources. This requires ensuring a basic understanding of data science for military leaders and training for military-technical leaders to establish an analysis-based corporate culture. Additionally, implementing an R&D programme is necessary to create the foundations for further deployment

Knowledge is Power

The famous quotation „knowledge is power", attributed to the English philosopher Francis Bacon, is most relevant when knowledge is the basis for critical decisions, for example, in the context of a military operation. The ever-increasing degree of digitalisation is not restricted to the military, and the amount of data available to military leaders for decision-making is constantly growing. Data is becoming increasingly versatile, especially in terms of sources, formats, and potential informative value. Often, terms such as „big data analysis", or technologies, such as artificial intelligence, are used to make partially or fully automated decisions based on data.

MACHINE LEARNING, DEEP LEARNING, AND ARTIFICIAL INTELLIGENCE

The term „data-driven decision-making" (3DM) refers to data analysis and preparation for better and faster decision-making. Data becomes information, and having this information available at the right time, and in the right quality, is vital for decision-making. This is the only way to combine gut feeling, opinion, and experience with numbers, data, and facts.

Therefore, the process always comprises the following steps:

1. Collect and analyse data;
2. Generate and group information;
3. Analyse trends;
4. Make predictions; and
5. Make decisions.[1]

The handling and evaluation of enormous amounts of data, that is, „big data analysis", forms the basis for functioning data-based decision-making. Examining vast amounts of data from various sources is essential in this context. The conversion of raw data into suitable formats and the recognition of faulty data play a key role in answering specific questions asked, for example, within the framework of preparing a situation report.[2]

The use of machine learning, deep learning, and artificial intelligence methods is essential to handle big data. In machine learning, a programmer intervenes in the learning process through feedback loops and provides the algorithm with the „right answers". In deep learning, the algorithms independently determine right or wrong decisions.[3]

Factors	Machine Learning	Deep Learning
Data Structure	Structured Data	Unstructured Data
Data Set Size	Small to Large	Large (more than one million data points)
Hardware	Works with simple hardware	Needs powerful computers. Neural networks multiply matrices which takes a lot of computing time
new events / threats	capacity to react	identify specialized personnel
Running time	A few minutes to hours	Up to weeks and months, as artificial neural networks must calculate an enormous amount of data
Interpretability	Some algorithms are easy, others are almost impossible to interpret	Difficult to interpret
Field of application	Simple routine tasks	Complex tasks

Figure 1. Differences between Machine Learning and Deep Learning[4]

In big data processing, the areas of application, as shown in Figure 1, lie primarily in the complexity, handling of different data structures, sizes of the data, and performance of the available hardware. Another factor that enormously influences performance is the availability of specialised personnel to answer the questions in reliable queries. Accordingly, a clear strategy for collection and processing is necessary before using large amounts of data. Staff and resources cannot be deployed efficiently without such a targeted strategy.

Examples from Different Fields

Formula One racing cars, among others, can be used as reference examples for the most diverse fields of application and possible uses of 3DM. In a racing car, information about the vehicle's technical condition is collected, transmitted, and evaluated by sensors in various components. This generated information is displayed in a digital twin of the racing car. It provides the management team with the basis for important decisions such as race tactics, instructions to the driver regarding the optimisation of the vehicle's performance, often-decisive pit strategies, and the timely replacement of components. After a race, the impact of the race on the technical components can be evaluated, and thus, measures for optimisation can be initiated. Additionally, various data is continuously collected from the driver. These include body temperature, heart rate, and reaction speed, among others. This makes it possible to detect signs of dehydration or cognitive

fatigue at a suitable time. Subsequently, the driver can be given specific training in physical and mental resilience based on this data.

Currently, 3DM is being used successfully in the economy. For example, in the manufacturing industry, sensors are attached to essential components of machines to apply predictive maintenance and, thus, plan and conduct maintenance work in an optimal timeframe to prevent breakdowns and save maintenance costs simultaneously. Reports show that such systems reduce downtime and increase machines' service life.[5] Another application is in logistics or fleet management, in which the supply chain is optimized, and resources are used more effectively and efficiently.[6]

Prerequisites for Using 3DM

For effective use, an appropriate analysis-based corporate culture is required. Without this, the introduction and adoption of this form of decision-making are made more difficult and run the risk of achieving detrimental effects due to a lack of acceptance. Various experiences, especially from the financial sector, show that it is crucial to actively involve managers in the transformation process.[7] Employees play a key role in this connection as well. Employee compliance in the various work processes is the basis for functioning data-based decision-making. However, in this context, it is essential that this only led to a high-quality implementation with a corresponding approach from top-level management.[8]

Another important prerequisite is to implement a process, information, and knowledge management with clear tasks and procedures to ensure an orderly and demand-oriented distribution and processing of information. High-quality knowledge management is essential to capture, process, and distribute existing knowledge.[9]

One of the first measures when using 3DM is the identification of specific questions that must be answered using data to support the decision-making process. No strategy for using sensors for data collection can be created without these questions.

Experts in big data analysis, machine learning, deep learning, and the use of artificial intelligence must be appointed. The challenge is that these experts must additionally have a sound knowledge of the „peculiarities" of the company and the area of application of 3DM in the specific field of integration.

Essential for the implementation of 3DM is the integration of a department that collects all data and makes it available in an orderly manner according to different requirements. This concept, also called „single source of truth" (SSOT), is vital to determine the essential data from various sources in a way that is appropriate for the target group, avoid duplicates, and identify inconsistencies or errors in the data.[10] Effective and active fraud management to prevent and detect attempts at manipulation and fraud is essential to ensure the integrity of data and information. This system can only achieve its full effect in conjunction with the process and information management outlined previously.[11]

Appropriate risk management is indispensable to record and assess risks in the individual process steps systematically. Not all risks can, must, or should be avoided. However, they must be known as far as possible to facilitate decision-making for dealing with these risks. For example, in 3DM, these risks can be related to missing, faulty, delayed, or incorrectly coded data.[12]

An essential prerequisite is a high level of resilience through effective business continuity management (BCM) in the event of data or information failure. To guarantee this resilience, there must be a framework of strategies and processes for the system's highest possible security, availability, and performance.[13] To ensure an effective use of the collected data, it is important to integrate a high number of data-collecting systems and provide a high-quality networking structure (high bandwidth). This is essential for a timely, qualitative, and accurate evaluation of the data.[14] To ensure the necessary analysis of the „big data", the use of artificial intelligence and other methods for automated processing and evaluation of data is necessary.[15]

3DM in a Military Context

Basing military decisions on quantitative data is not a novel practice. Ratios have always been considered, and supply planned quantitatively. However, the available data sources and volumes are no longer commensurate with the quantitative and qualitative data collected, processed, and evaluated in the 21st century.[16]

Timely and effective decisions are essential for successful military operations. The saying „the best decision too late is worthless" can be seen as emblematic of the dilemma of military decision-making. The available situational picture is often incomplete, and these gaps must be filled by the military leader using the military decision-making process (DMP), personal experience, and determination to make timely decisions. To co-

ver all required disciplines and capabilities, the military commander takes advice from subject matter experts to reduce complexity and make and implement decisions in the required level of detail.

Therefore, data-based decision-making must supplement and condense the existing situation picture, analyse trends using technology (e.g., AI), and create predictions. This provides the military commander and his experts with additional bases for preparing and making decisions, thus reducing the need for „assumptions" and „gut feelings". Another key factor in combat is to maintain the initiative. Here, trends and forecasts that can be obtained from data can decisively support the military commander to assess his options for action quicker and more comprehensively.

As in the civilian sector, the basis for 3DM in the military is the collection of data through the „network of things". For example, in the case of equipment that is prepared with biometric sensors, or in the case of equipment and vehicles that automatically transmit their status (i.e., maintenance status, operating resources, ammunition, and position).

In evaluating this data and generating and grouping information, the time factor and the form of the presentation, are of considerable importance. This is especially relevant due to the information needs of the different staff departments. Not every piece of information is time-critical and affects every department equally. However, interdependence can never be completely ruled out.

The challenge for the military staff is to question the collected, evaluated, and presented information using critical thinking, resolve complexities, and evaluate situations with the help of personal training and experience. Thus, certain skills of the military leader, such as empathy and imagination, as well as an important level of social and intercultural competence, are essential for improving the quality of leadership decisions.

Accordingly, the necessary subjective interpretation of the military leader requires an intensive engagement with topics from the field of data evaluation (data science) for military leaders to generate acceptance and understanding of these topics. However, there is a need for specially trained data analysts who can specifically deal with the technical analysis level and support the military commander and his specialist officers with targeted evaluations.

AREAS OF APPLICATION IN THE MILITARY CONTEXT

The possible applications of 3DM in the military are just as extensive as in the civilian world. However, for the purposes of this article, only a few possible applications are discussed below.

Evaluating image and film material requires a lot of time and expertise. For example, a high degree of automation can be achieved using machine learning, which gives the human evaluator more time for detailed interpretations. The merging and checking of data in different formats and from different sources can be automated, and the quality of the data can be verified through a comparison. This increases the security of further evaluation and use.

In military logistics, implementing predictive maintenance and automating supply requirements of high-quality systems can optimise spare parts and stock provision to minimize downtime.[17] Another application in this area is the permanent assessment of location reports of own forces, as well as the status of vehicles or systems with respect to further deployment possibilities or maintenance and supply needs.

To create a digital twin of the battlefield, in addition to integrating own systems and elements, digital preparation of the terrain is possible within the framework in which current available environmental data, such as weather or water level, is included. This data can be used to automatically create options for action in the battle using artificial intelligence, considering the capabilities of own systems, the terrain, and information about the enemy. A key application area is modern visualisation techniques (i.e., 2D, 3D, AR, and VR) to effectively present the processed information to military leaders.

CHALLENGES IN THE MILITARY ENVIRONMENT

The military environment makes high demands in the areas of data acquisition, data transmission, and information processing, which are rarely encountered in this form in the civilian environment. The first challenge in the military environment is the integration of sensors in military vehicles and systems. Specifically, there is limited space to install these sensors and supply them with energy in military vehicles. Unused space and energy reserves are in short supply, especially in military vehicles and systems. This is because at the time of conception of these vehicles, not all emerging needs can be planned for, and the fulfilment of the main task of the system and protection of the crew is paramount. Data transmission is not straightforward in a highly mobile network, which must function under operational conditions, as the available means of communication at the tactical level often do not have the necessary bandwidth for physical reasons (e.g.,

the selected frequency, waveform, and modulation type).

Moreover, intensive use of the electromagnetic spectrum entails other risks, such as the ability to be reconnoitred, and, thus, more easily combated by enemy forces. However, the jamming and spoofing of sensors is a challenge for improving the sensors and implementing a (software-defined) plausibility check against these risks. Similarly, the necessary classification levels must be planned, and the necessary systems for evaluating the data and using the information, such as a command information system, must be implemented. The next challenge is that there are hardly any standard industrial solutions to integrate sensors in military vehicles and systems. Further, the necessary software for evaluating and processing the collected data requires a high degree of flexibility for this dynamic application area due to the specific military requirements.[18]

Opportunities and Risks Associated with Using 3DM

The use of 3DM results in comprehensive changes for military leaders. Subsequently, these changes lead to advantages and disadvantages for advancing digitalisation in the military.

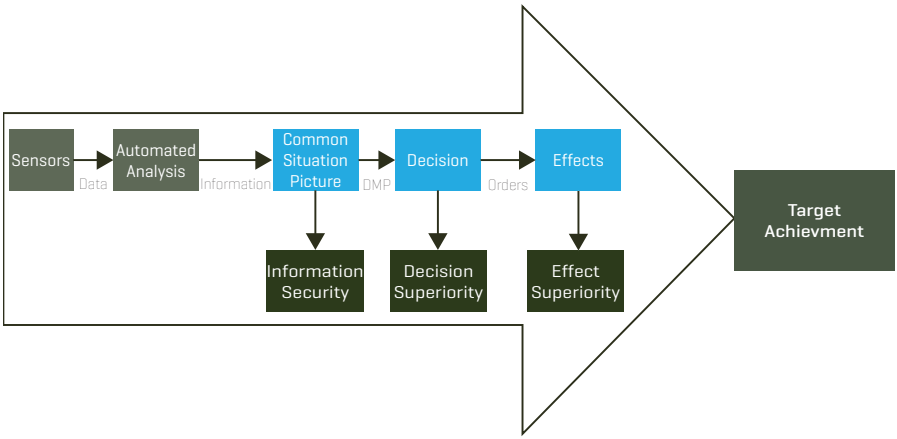


Figure 2. Impact of using 3DM in a military environment[19]

One of the greatest opportunities and objectives regarding using 3DM in the military is to achieve information superiority to gain effect superiority. This enables a more efficient achievement of objectives.

To achieve these goals, some changes are necessary. One major change is the faster and more accurate collection of sensor data to generate the common situation picture of the transmission of data and information to neighbours or allies and the more efficient use of autonomous systems on the battlefield.[20]

OPPORTUNITIES FOR USING 3DM IN THE MILITARY ENVIRONMENT

As in the civilian sector, the structured use of data for decision-making provides numerous opportunities for the military leader. In the military environment, these include the automated creation and presentation of key insights through the connections between independent pieces of information, which, when combined, have high relevance for decision-making. Based on this consolidation of the information, the opportunity for faster decisions arises from the recourse to a prepared situation picture.

Additionally, the quality of the decisions increases due to the recourse of the possible integration of partially-automated prepared decision proposals. These partial automations of the decision-making process, which prevent military leaders from creative planning steps through trivial, manual activities, can increase the efficiency of the significant contributions of the staff in the military DMP. Accordingly, a corrective function can be established by automated verification of feasibility by pre-calculating consumption values.

Another positive effect is that minimising the susceptibility to errors by automating monotonous activities, such as the processing of tables, frees up resources for other tasks (e.g., staff time for other planning activities). Future decisions are improved through the documentation and evaluation of decisions and their effects. The available uniform situation picture facilitates a holistic view of the current situation for all areas of operational command.

HAZARDS/RISKS OF USING 3DM IN THE MILITARY ENVIRONMENT

The most diverse sources of risks arise while using 3DM in the military. One hazard while using 3DM is the possible disengagement of the military leader from important decisions because of automated decision suggestions. There must be a military decision-maker in the loop to make decisions consciously, especially if the decision is regarding using deadly force.

Further, human beings' limited objectivity leads to a targeted search, or preference, for information that supports preconceived opinions. This „cherry-picking" pulls individual pieces of information out of context and prevents an objective assessment of the

overall situation. Subsequently, this leads to distortions and misunderstandings, which develop into errors of judgement and wrong decisions. Moreover, the risk of forming a preconceived opinion or assessment result after the first findings (the first situation picture) is that information that comes in later will only be considered to a limited extent or not at all.

Another hazard is due to the limited ability of humans to comprehend complicated or complex facts. This gets even more difficult by an increase in the amount of information and its sources and categories. It leads to the risk of decision-makers having a high dependence on data to make decisions. The ability to anticipate events or make assumptions can be reduced due to a lack of practice and experience.

Another risk is the reduction of "critical questioning" of subjectively valid information and the reduction of creativity by relying on suggestions or excluded possibilities. The constantly condensed situation picture, which is available through the compilation of sensor results, can lead to a "decision delay" as new changes are constantly awaited. Additionally, the fact that there is the possibility of realistic forecasts and trends can lead to inhibition in taking decisions despite the high tendency to minimise risks. Even the lack of intuition or the „divine spark" that comes from recognising opportunities in combat through deliberate deviation from the norm cannot occur using 3DM. In many historic battles, the commander's intuition or the often-described „divine spark" in which he consciously deviated from the norm was held responsible for the successful outcome of the battle.

On the technical side of view, there are various security risks due to the loss, manipulation, or falsification of data if it is leaked to „unauthorised parties" through security breaches or if it is not processed properly by the staff (compliance). Furthermore, the necessary time and costs for implementation, as well as the time for training, must be considered.

Derived Measures at Various Levels

In this section, derived measures at various levels are presented. These are the military strategic level to ensure an integrated approach, training level to sensitise future military leaders in a timely manner, and finally, the research and development level to create the prerequisites for deployment in the armed forces.

NECESSARY MEASURES ON THE MILITARY STRATEGIC LEVEL

The Austrian combined military forces must devise and implement a strategy for dealing with digitalisation, big data, the use of artificial intelligence, and 3DM. The design of this strategy must primarily address the needs of military decision-makers at the tactical (main effort) and operational levels. These needs must be analysed in detail and matched with the existing and anticipated technologies. This is because, in this context, "the best strategy too late is useless" as well. In addition to implementing a strategy, partnerships with strategic partners, research institutions, and technology companies to exchange experiences and research specific issues play a significant role.

The realisation that technological developments around the analysis and use of big data are subject to shorter development cycles, especially in the industry than in the military sector, reinforces the need to break away from classic procurement programmes and use research as an innovation element for the timely identification of trends as required by the military.

The timely involvement of companies and organisations around security research helps form an essential cornerstone for further development. In addition to purely military needs, numerous application fields deal with managing major events, such as disaster relief after natural catastrophes. The promotion of training and further education of experts in the professional military field for 3DM must be supported to ensure internal assessment and monitoring of the necessary digitisation projects. Additionally, military-experts must be recruited to benefit from their professional expertise from the civilian sector and experience in the military.

NECESSARY MEASURES AT THE LEVEL OF MILITARY LEADERSHIP TRAINING

To meet the requirements of using 3DM for military leaders, some measures in the field of training are necessary. Military decision-makers must be taught the basics in the field of data science to be able to recognise the nature, urgency, and significance to give analysts concrete instructions for the creation of analyses, trends, and predictions. Additionally, they must have a high level of awareness about the different dimensions in decision-making, especially awareness of how information is to be viewed through personal experience, as well as cultural frameworks. Military leaders must hone and maintain the ability to make decisions under time pressure, and in unclear situations, and adapt these decisions to a condensed situation picture within the framework of a continuous situation assessment.

Training military-technical leaders to ensure that experts in the field of data science — with military socialisation as an interface — function between military commanders and technical analysts or other experts is becoming increasingly crucial for the use of 3DM. There is a need for military specialists who can perform these tasks under all environmental conditions to plan, operate, and monitor the overall technical systems under operational conditions.

The new bachelor's degree programme in Military Information and Communication Technology Leadership, implemented at the Theresan Military Academy in the winter semester of 2022, precisely closes these gaps in training military-technical leaders and the technical inputs around general military leadership.

NECESSARY MEASURES IN THE FIELD OF MILITARY RESEARCH AND DEVELOPMENT

The military must conduct a multi-phase research and development programme to provide concrete and tailor-made derivations for the requirements in various (prioritised) use cases in cooperation with the technical and system departments. The Theresan Military Academy has planned such a programme. This programme will be implemented in 2023. The following steps will be taken within the framework of the research:

1. Identify concrete military use cases for the deployment of 3DM (decision level);
2. Analyse the required information for military decision-makers in the context of these use cases (information level);
3. Define the required data and the possibilities of data acquisition (data/sensor level);
4. Development of a „demonstration system" from data collection, transmission, and evaluation, to visualisation of the results for the military decision-maker.

In addition to the ongoing involvement of military experts and stakeholders, the integration of civilian institutions and companies and cooperation with strategic partners is essential within this programme's framework to achieve the goals more time- and cost-efficiently.

Conclusion

Implementing 3DM in the military environment enables more efficient use of resources and can lead to quicker and more accurate decisions. The military staff can spend more time on creative aspects of the military decision-making process owing to the partial automation of the assessment process.

The limitations of this paper are the depth of coverage and the analysis of common sources. This paper aimed to provide a general overview of this extensive subject area; therefore, technical details were not included. Subsequently, the Theresan Military Academy will start a research project to describe concrete use cases of 3DM in the Austrian military to develop and test concrete solution strategies for them.

Endnotes

[1] Carl Anderson, Creating a Data-Driven-Organization: Practical Advice from the Trenches (Beijing: O´Reilly, 2015), 1-11.
[2] Arshdeep Bahga, Madisetti Vijay, Big Data Science & Analytics: A Hands-on Approach (online: Hands On Approach Handbook, 2016), 26.
[3] Shai Shalev-Shwarzt, Ben-David, Shai, Understanding Machine Learning: From Theory to Algorithms (Cambridge: Cambridge University Press, 2014), 4-6.
[4] Source: Adjustments by the author; „Deep Learning vs. Machine Learning: Wo liegt der Unterschied?," Freshworks, last modified June 29, 2021, https://www.freshworks.com/de/deep-learning-machine-learning-blog/.
[5] "Instandhaltung 4.0: Bessere Planbarkeit und Reduktion von Stillstandzeiten," Einkauf und Management, last modified Octobre, 2017, https://einkauf-und-management.de/instandhaltung-4-0-bessere-planbarkeit-und-reduktion-von-stillstandzeiten/.
[6] „Leitfaden für eine datengestützte Entscheidungsfindung in der Industrie 4.0.," Magic Software Enterprise Ltd., last modified 2019, https://factoryeye.magicsoftware.com/wp-content/uploads/2020/10/WP_The-Executive-Guide-to-Data-Driven-Decision-Making-in-Industry-4.0_DE.pdf, 3.
[7] Carl Anderson, Creating a Data-Driven-Organization: Practical Advice from the Trenches (Beijing: O´Reilly, 2015), 255-260.
[8] Martin T, Biegelman, Joel T. Bartow, Executive Roadmap to Fraud Prevention and Internal Control: Creating a Culture of Compliance (Hoboken N.J: Wiley & Sons Inc., 2012), 97-98.
[9] Urho Creusen, Birte Gall; Oliver Hackl, Digital Leadership: Führung in Zeiten des digitalen Wandels (Wiesbaden, Heidelberg: Springer Gabler, 2017), 70-71.
[10] „Single Source of Truth: Definition & Umsetzung," Talend, last modified 2022, https://www.talend.com/de/resources/single-source-truth/.
[11] Martin T Biegelman, Joel T. Bartow, Executive Roadmap to Fraud Prevention and Internal Control: Creating a Culture of Compliance (Hoboken N.J: Wiley & Sons Inc., 2012), 55.
[12] Urho Creusen, Birte Gall, Oliver Hackl, Digital Leadership: Führung in Zeiten des digitalen Wandels (Wiesbaden, Heidelberg: Springer Gabler, 2017), 137.
[13] Andrew Hiles, The Definitive Handbook of Business Continuity Management (Chister: Wiley, 2009), 27-30.
[14] Gérard Boisboissel, „New Technologies and Decision-Making for the Military," Intechopen, (July 2021): 5.
[15] Ibid., 6.
[16] "Benefits and Pitfalls of Data-Based Military Decisionmaking" Scott S. Haraburda, Small Wars Journal, last modified 21 November 2019, https://smallwarsjournal.com/jrnl/art/benefits-and-pitfalls-data-based-military-decisionmaking.
[17] „SUMMARY OF THE 2018 DEPARTMENT OF DEFENSE ARTIFICIAL INTELLIGENCE STRATEGY: Harnessing AI to Advance Our Security and Prosperity," U.S. Department of Defense, last modified Februar 2019, https://media.defense.gov/2019/Feb/12/2002088963/-1/-1/1/SUMMARY-OF-DOD-AI-STRATEGY.PDF. 11.
[18] „Leitfaden für eine datengestützte Entscheidungsfindung in der Industrie 4.0.," Magic Software Enterprise Ltd., last modified 2019, https://factoryeye.magicsoftware.com/wp-content/uploads/2020/10/WP_The-Executive-Guide-to-Data-Driven-Decision-Making-in-Industry-4.0_DE.pdf, 8.
[19] Source: Author.
[20] Gérard Boisboissel, „New Technologies and Decision-Making for the Military," Intechopen, (July 2021): 3-4.

12

EDUCATION OF MILITARY OFFICER CADETS DURING THE COVID-19 PANDEMIC

MACIEJ WIELGOSIK, ERYK MARCHLEWSKI

▶ **Author:** First Lieutentant Maciej Wielgosik M.Sc. & M.A., is a Ph.D. student and an officer responsible for military discipline issues at the Military University of Technology in Warsaw, Poland; his scientific activity deals with the sociology of disposable organisations [Military University of Technology, Warsaw, Poland].

Officer Cadet Eryk Marchlewski B.Sc., M.Sc. Student, Chairman of Student Linguistic Association [Military University of Technology, Warsaw, Poland]. The views contained in this article are the authors' alone.

▶ **Abstract:** The educational safety of military training refers to the possibilities of the constant and continuous development of the educational process. As a result, a person undergoing education at a military academy may become a fully-fledged officer. Effects related to the global spread of COVID-19 also influenced the functions of officer cadets and future officers. Military socialisation, education, military training, family relations, and morale were selected areas of the military education system that the authors have analysed to determine the impact of the COVID-19 pandemic on the educational security of future officers. The need for rapid implementation of online classes and reduced officer cadets' contact with the outside world was vital—but it also had negative consequences. Besides the negative consequences, the pandemic may also positively affect future officer training. Building relationships between soldiers, commitment to the local community, and class hybridisation are some solutions that can be utilised to enhance the education process significantly. The proper adjustments and adaptations to pandemic reality enabled the transformation of potential threats into opportunities for improvement of training. Polish officer cadets were engaged in the anti-pandemic activities implemented in the crisis management system of the country. Those solutions implemented to adjust military education to the COVID-19 pandemic reality positively impacted the security potential and allowed soldiers to acquire unique skills in the fields of leadership, management, and cooperation in hazardous conditions. Officer cadets' actions during the pandemic for the benefit of society also influenced society's perspective on the utility of military structures in crisis response.

- **Problem statement:** How to adjust academic education to restrain the adverse effects of the pandemic?

- **Bottom-line-up-front:** Since 2020, the world has faced a pandemic affecting all areas of life—including the functioning of military education. The pandemic's aftermath is not only an epidemiological issue but also heavily influences the human psyche and social interactions, which are of immense importance for proper educational outcomes..

- **So what?** Relevant departments of military universities should conduct an assessment that would enable data collection concerning officer cadets' educational processes. Based on the fact that we are all dealing with the COVID-19 pandemic, the conclusions of the COVID-19 pandemic in the field of military education should be discussed and implemented in case of the emergence of similar threats in the future, and also to make educational security more flexible to possible disruptions.

COVID-19 and MUT

The COVID-19 pandemic can be discussed from objective or subjective perspectives; each person's experiences of the pandemic are unique. However, few processes in society are purely polar and one-sided. Often, phenomena with adverse effects can also contain positive attributes of benefit to a narrower group of people.[1]

If we talk about the military during the pandemic, it should be pointed out that the functioning of soldiers has changed. For example, the organisation of the educational system has been changed from stationary to remote. In addition, military academies also supported crisis-response authorities throughout the country, and officer cadets played a crucial role in this support. They have carried out field tasks alongside the Territorial Defense Forces and provided technical solutions to ongoing problems. It should be noted that it was necessary to make organisational changes indispensable for the constant provision of human resources to perform the tasks, which resulted in the limitation of the possibility of leaving the Academy by officer cadets.[2]

The pandemic and the related infections did not spare this social group, which influenced the scope of tasks assigned to the armed forces. The entire Armed Forces were responsible for the tasks of Operation „Shield" and „Resilient Spring", which later evolved into „Enduring Resilience" (Polish: Stałą Odporność). The military was responsible for setting up container hospitals for the civilian healthcare service, transporting, securing, and storing strategic reserves of materials used to fight the pandemic. Moreover, the soldiers of the Armed Forces carried out activities aimed at supporting institutions that provided social assistance, such as the evacuation of nursing homes or the provision of basic necessities for people under the quarantine regime.

Military Education in Poland consists of entities providing educational services at various levels for current and future soldiers. These entities also offer training courses for reserve personnel to prepare them to function in the armed forces and thus indicating the organisational, equipment, and other significant changes that have occurred to enable them to perform their duties if necessary. These diverse levels constitute the primary military education created by training centres and NCO schools for educating lower commanders. Higher military education is responsible for the training of officers. It takes place at military universities with different legal statuses. From the first day at the premises of the university, a person who comes to study there obtains the title of officer cadet and acquires skills and knowledge through a wide field of study, as well as general military knowledge. An officer cadet's life within the university's walls is specific in that it resembles the functioning of soldiers on basic military service years ago.[3]

Entering the premises of a military university means the obligation to undergo a particular education process. It lasts five years (except for the medical faculty, where the education lasts six years) and ends with the officer's examination. This education requires certain sacrifices that were affected by the pandemic; the first concerns the fact that an officer cadet, during their education, cannot leave their designated accommodation without permission. This restriction is due to the increased requirements regarding the necessity to ensure the functioning of the military university as a regular military unit. Still, it also shapes the ability to submit to specific military rules and rigours. Failure to comply with this principle is a source of disciplinary liability. However, repeated rejection of these principles by an officer cadet may result in criminal liability for the officer cadet in question. [4]

Restrictions during the pandemic in MUT

It should be recognised that the pandemic was a specific, unplanned personality test for these young people in at least two aspects. First, the ability to function in a hierarchical organisation, and second, morale. Why has COVID-19 allowed for some breakthroughs in the area of command? When there are no disruptions, it is easier to function than when threats make it difficult to carry out daily tasks. On March 22, 2020, the Rector of the Academy ordered all the officer cadets to stay accommodated in their dormitories until further notice. The possibility of leaving the Academy was limited only to a few exceptional cases. At the same time, lectures and exercises were suspended, and later, remote forms of education were introduced.[6]

The stress test is decisive in evaluating specific organisational solutions in management sciences. It seems reasonable to recognise that it was and is also true for officer cadets. In a situation of peace, it is easy to plan everyday life. However, being an officer cadet is not only about studying but also about serving. For this reason, it seems appropriate to emphasise that the skills acquired by an officer cadet during the pandemic may prove invaluable because they add a value that cannot be deliberately communicated. This value is about unique social competences, shaping the awareness of responsibility for actions taken and creating the ethos of service in a harsh pandemic reality. Family, education, socialisation, discipline, morale, and military training are those areas that have been identified as the most significant in the functioning of young people as officer cadets from the perspective of their destiny as future commanders.[6]

Family Life During the Pandemic

The family is the basic community. The ties formed with parents, siblings, and life partners determine the decisions made in education and work. A person strives to choose a direction of professional development that will enable them to meet the needs resulting from the hierarchy. The idea of the family and its influence on the service has often been manifested in the research conducted by sociologists.[7]

On the one hand, if one treats taking up service as gainful employment, it allows you to secure your and your family's material needs. In the society and relationships that govern it, however, there is an equivalent to Newton's Third Law of Motion. Service potentially gives something to the family but also limits the soldier's relationship with their family to some extent.[8] This is evident in young officers' education, as officer cadets' requirements are even more significant than those for other soldiers. Their purpose is to command subordinates and manage the tasks set by their superiors; hence their service in a barracked system throughout their studies and, to some extent, rationing their ability to leave the university area results from the need to unite future officers with the service and shape their characters so that in the future they can force the obedience of orders and instructions.[9]

Military socialisation that takes place among newly incorporated soldiers cannot wholly replace the relationship with the family. Hence a kind of struggle for a soldier between the family and the service emerges.[10] Balancing these relationships allows the officer cadet to achieve success in personal and professional fulfilment. In terms of family relations, it should be noted that the internal way of functioning of the university has determined to some extent, the relations of officer cadets with their families.[11]

The threat of the SARS-CoV-2 virus triggered the need for action from the public administration, including university authorities. The university's functioning was quickly adapted to the hybrid model. Whereas civilian students left the university, officer cadets remained because, apart from being students, they were also soldiers and, if necessary, could be engaged in activities ordered by their superiors. Thus, it was necessary to limit the possibility of soldiers departing from the dormitories for all kinds of leaves and permits.

The emergence of the SARS-CoV-2 virus was accompanied by the lack of reliable methods for preventing its spread. Due to the real threat of the virus spread among the large community of officer cadets, the lack of aforementioned methods, and the need for epidemiological protection at the academy, it was necessary to keep officer cadets

in their place of accommodation. Officer cadets could not be sent home due to the risk of the potential infection of their family members and the possible transmission of the virus from the outside during the officer cadets' return to the Academy. According to the research conducted by the authors, such forced separation from families had negative consequences in the opinion of officer cadets. First of all, there was no reliable information about the duration of the period with no possibility of leaving the Academy. Unfortunately, no one could provide such information because, in the initial phase of the epidemic, the pathways of spreading the virus or the health effects it caused were unknown.

Moreover, considering the average age of officer cadets of around 23, it should be noted that this is also the period when some people decide to start a family or already have one. The research shows that the vast majority of officer cadets declared that the restriction of the freedom to leave the Academy significantly impacted their family life. However, taking into consideration the nature of the SARS-CoV-2 virus threat, this action was a necessity. In some extreme cases, certain officer cadets considered leaving the army due to changes in the organisation of the university's functioning during the pandemic.

Education During the Pandemic

Since March 2020, it has become necessary to adapt the rules, forms, and education methods to correspond to the requirements posed by the state of a pandemic threat and, later, the pandemic. For example, civilian polytechnic students started to implement distance learning.[12] Since military students attend some general polytechnic subjects together with civilian students and organisers of polytechnic education are faculties, military students also receive distance learning. Opinions in this respect, however, are strongly divided, depending on the field of study and the dominant form of teaching (lectures, classes, laboratories). Most military students found remote courses to be a suitable alternative to classroom lectures. In the research, over 42.27% of officer cadets (n = 388) stated that such education was effective, and 21.40% had no opinion. 36.34% of officer cadets did not consider such education to be effective. There are several reasons for this fact. First, to participate in a course in a remote form, there is no need to go to the lecture hall. The growing number of students with limited housing space may cause a reduction in the quality of reception of the content conveyed in such conditions. Hence allowing the student to choose where s/he participates in classes seems to be an exceptionally satisfactory solution to this problem. Many lecturers organised classes using e-learning platforms, enabling the recording of lectures with the possibility of later reproduction. This provided an opportunity for those students who wanted to re-research

the content presented. This solution also gave a chance to those who could not attend lectures for several reasons. Online learning for officer cadets also resulted from the decision of the Academy's authorities, and the positive aspects of distance learning may be used in the post-pandemic future.

It should also be noted that the implementation of remote classes and the idea of recording allows students to familiarise themselves with the presented material later and thus enable absent officer cadets to obtain missing knowledge. It is also worth mentioning that sometimes the conditions of acquiring knowledge by students, and more precisely, the place in which it takes place, determine the success of this process. Many students found it much easier to read the course material in the comfort of their rooms.

61.86% of the surveyed officer cadets (n = 388) stated that they had become so used to the organisation of remote activities that it would be difficult for them to return to those carried out traditionally. 23.97% of the officer cadets stated that they got used to the remote classes, but they would prefer to return to those carried out stationary, and only 14.17% of the officer cadets did not have an opinion in this regard. Importantly, 68.30% of officer cadets agreed with the statement that one of the effects of the epidemic is an increase in their efficiency. The use of remote learning in the case of exercises and laboratories did not fully achieve the intended educational goals. Interviews with students conducted as part of the research show that problems related to the workshops appeared in solving complex mathematical problems, requiring discussion of individual stages of the task.[13] The inability to obtain quick answers from students led to the verification of whether the result obtained by the student was the same as that resulting from the model solution of the task.

In the case of laboratory classes, the problem was even more complex. Laboratory work requires acquiring theoretical knowledge in the field of problem-solving in a practical manner using materials, tools, and techniques gathered in a specific laboratory. Here, indicating only one adopted solution to the problem is impossible. Some lecturers provided students with a recording of conducting measurements with devices available in the laboratory and the input data necessary to prepare the reports. Thus, they made the test results available that the students would obtain by adequately using their knowledge and skills while operating the device. Others tried to divide training groups into smaller ones, enabling students to make measurements on their own. The respondents assessing the effectiveness of conducting various forms of remote classes on a scale from 1 to 5 (where 1 is the worst and 5 is the best) gave an average mark of 3.81 for lectures, 2.65 for exercises, and 2.05 for laboratories (n = 388). However, it was optimal to hybri-

dise with the abovementioned methods and organise classes as workshops that activate students and then conduct research of knowledge about their theoretical foundations for implementing laboratory classes. In the opinion of the officer cadets surveyed, 77.58% of the respondents (n = 388) stated that the hybrid model of teaching, in which lectures are carried out remotely, but classes and laboratories are stationary, is better than the traditional approach, in which everyone must participate in all forms of fixed classes. Reaching this stage allowed the laboratory leader to reassure himself that the teaching objectives had been achieved even though discussing and illustrating the proper equipment operation methods only.

Military Education During the Pandemic

Military education involves two stages. The first stage is the adaptation stage, i.e., basic training. During this period, basic military knowledge is transferred, and the character traits desired from a soldier are formed. After completing this stage, military education moves to the second stage - classes done over five years of study. During this time, officer cadets gain technical education and specialist military knowledge, as well as social and command competences, which varies depending on the faculty they study. The literature states that the goal of this stage is to endow individuals with the skills necessary to function in the profession as highly qualified soldiers and thus shape their social values, character traits, and commitment.[14]

As a hierarchical organisation, the military requires soldiers to behave appropriately in certain situations. Hence the area of education includes fire training, tactics, reconnaissance, and physical training. It is difficult to imagine the possibility of limiting this area of activity. During the pandemic, it became necessary to introduce new methods and forms of class organisation that would enable commanders to pass on vital military knowledge. Besides the broader emphasis on using laser simulators in the classes, military training was implemented without significant changes for the soldiers.

It should be noted, however, that the inclusion of officer cadets in assisting the country's citizens by appointing them to the Territorial Defence Forces can be considered in the category of the added value of military education. The effectiveness of disposition groups increases as the chemistry of their members increases. When soldiers know their place in the hierarchy and can predict at which stage of task execution, adversities may occur. This is achieved through joint training and exercises and then intensification and ripping. However, no one could prepare military education for the epidemic threat.

Moreover, professional experience, social competencies, and the ability to implement actions as part of crisis response are unique values, the transfer of which is complicated. The officer cadets from MUT were assigned to support the activities of the Territorial Defense Forces throughout the country during the period of the greatest epidemic threat in Poland. In everyday military training in times of peace, a soldier may overlook the need to help or to devote themselves to service matters beyond the expected level. In short, routine limits empathy in some way. The performance of official tasks for the community allowed the service personnel to find a sense thanks to the fact that their work is recognised, and they noticed its positive effects. 62.63% of the surveyed officer cadets indicated that, in their opinion, their will and need to help (empathy) increased when they could see its meaning with their own eyes.[15]

The Military University of Technology officer cadets were responsible in the Territorial Defence Brigades for managing logistic support, completing supplies, and physically delivering food and necessities to residents who could not reach the stores due to quarantine or other reasons. In addition, they supervised the functioning of the aid notification system and, thus, were responsible for gathering information on the needs and taking them into account in the supply plans of Territorial Defence units. As time went by, it also became necessary to perform tasks related to the control of people under isolation or in quarantine at their place of residence. At that time, soldiers helped police officers and controlled the isolation process. Soldiers from the Military University of Technology also developed a mobile application supporting the process of reporting the needs of people staying due to quarantine at their residences and aggregating this information to local crisis management centres. Knowledge in this area was divided into areas of responsibility of respective sub-divisions, and the expected products were delivered to the inhabitants. It is also worth mentioning the soldiers' involvement in conducting epidemiological interviews. At the university headquarters, soldiers obtained information from patients about their health conditions and people in contact with them who could become ill. The implementation of epidemiological interviews greatly supported the sanitary services due to their previous inefficiency.[16]

Doctors involved in combating and counteracting the pandemic's effects could not simultaneously act in the area of pandemic prophylaxis because the number of people requiring care continued to grow and, along with this number, the percentage of seriously ill people increased. The development of a method of communicating between citizens and officer cadets regarding the pandemic and the diseases themselves, and the way of proceeding in connection with their outbreak allowed them to directly reduce the pandemic threat in the country.[17] Therefore, attention should be paid to two aspects that have

changed in military education during the pandemic; the first concerns a significant deterioration in the possibility of conducting military training due to pandemic restrictions. The number of military classes has decreased, and the possibility of providing specialist training outside the university has been limited. On the other hand, there was an underestimated and unnoticed possibility of developing officer cadets in the area of functioning as part of crisis response, checking their skills in the process of command, and helping citizens. In a subjective opinion, such a value may make soldiers involved in anti-pandemic activities better perform their tasks in the future because, during this time, they saw the meaning of the actions taken.

The research showed that 66.24% of the surveyed officer cadets believed that the practice of their cooperation in hazardous situations allowed them to build better group relationships and esprit de corps. Furthermore, 41.23% of the respondents indicated that one of the most significant positive outcomes of the pandemic was the possibility of acquiring knowledge and competences that were not given due attention previously.

The military is trained to be ready to act when needed. The repetition of certain activities, exercises, or patterns implemented in service activities grounds the appropriate behaviour from an operational perspective. In this helpful monotony, respective units may lack the variety the soldiers obtained when assigned to perform anti-pandemic tasks. In individual conversations conducted by the authors as part of the research (May 2022) of officer cadets performing functions in the Territorial Defense Brigades in the area of crisis response, there were often statements that even the initial reluctance to perform tasks away from the university in an unfamiliar environment changed when the soldiers tangibly saw the result of their actions, for instance: the food provided, the residents looked after, and the word thank you built an atmosphere of a well-fulfilled duty. 54.64% of respondents during the pandemic engaged in anti-epidemic activities by donating blood or blood components at blood donation points, and 48.45% of the respondents stated that they had carried out tasks as part of the Resilient Spring operation in the Territorial Defense Brigades. 29.38% of the respondents were involved in providing food to elderly and quarantined people. Moreover, 21.90% of the respondents were responsible for conducting epidemiological interviews to support the state healthcare system. From the perspective of the COVID-19 pandemic, morale can be discussed by considering factors such as mental resistance, trust in commanders and colleagues, the use of military equipment, and the internal discipline inherent in subordinate organisational structures, as well as responsibility.[18]

Morale

There is no single definition of morale. Esprit de corps is sometimes called institutional belief, but looking at morale from a unique perspective is better. Leo Tolstoy wrote in War and Peace, "In military affairs the strength of an army is the product of its mass and some unknown x".[19] Historical experience indicated by Tolstoy shows that the quantity of an army does not necessarily correspond to its strength.

An explicit example is the ongoing war in Ukraine. The origins of the current situation should be sought in the period preceding the illegal annexation of Crimea in 2014. At that time, Ukraine made distinct statements considering its path of a „new opening" in the field of international security. On February 24, 2022, the troops of the Russian Federation crossed the Russian-Ukrainian border. Two days later, the Russian news agency RIA Novosti- reported Ukraine's conquest.[20] From today's point of view, we perceive the operation as an embarrassing predicament for Russian authorities. At the time of publication of this article, the war continues, and the Ukrainian Armed Forces lead an effective counteroffensive which has already resulted in some serious regains of hitherto occupied territories.

The presentation of such information in the Russian media meant a substantial underestimation of Ukraine's military power. Independent rankings suggest that Russian militarily significantly exceeds Ukraine's potential.[21] Nevertheless, news about the Ukrainian defenders, their will to fight, and their successes on the battlefield appeared in the media. Some of these news pieces became icons of the Ukrainian resistance.[22] Pure calculations concerning the number of soldiers and military equipment could imply an explicit advantage for Russian forces that should easily outperform Ukrainian troops. Then, how to explain the opposite, seemingly counterintuitive effects?

The conclusion might be that sometimes small armies might beat more powerful opponents, while not all of the factors accompanying such results are obvious. Tolstoy also points out that such success of potentially smaller forces is sought in technical superiority, field conditions, or the genius of commanders. Behind such events is an unknown factor X. "That unknown quantity is the spirit of the army, that is to say, the greater or lesser readiness to fight and face danger felt by all the men composing an army, quite independently of whether they are, or are not, fighting under the command of a genius, in two—or three-line formation, with cudgels or with rifles that repeat thirty times a minute." Factor X is what builds morale. [23]

Beyond faith, the essence of morale is the readiness to perform tasks and the belief

that they are right. Of the three aspects of leadership (morale, physical and intellectual), the literature indicates that the most important, and at the same time the hardest to achieve, is leadership in terms of morale. This is due to the need for a personal understanding of the issue of service, instilling norms of proper behaviour in subordinates, which directs these issues to the moral development of leaders, including understanding, maturity, and personal ambition.[24] Morale is referred to as the belief in success and a sense of responsibility for achieving goals. It can be concluded that the presence of an elevated level of morale is accompanied by a situation in which the person setting a task to be performed by soldiers can be sure that it will be performed with the utmost diligence and in the prescribed time. It is worth considering that morale, like authority, is built from conscious and unconscious actions.[25] People who previously experienced more difficult moments together during military service establish relationships more easily, and the joint bearing of the hardships of military service of superiors with their subordinates results in the deepening of a specific bond which means that even if the subordinates subjectively disagreed with the task set and the manner of its implementation, they proceed to its implementation because they believe in their superior.[26] This is how authority is born, resulting from premises other than the formal assignment of soldiers. The period of the COVID-19 pandemic has so far been a morale test whose success depends on the adopted criteria.

The research shows that 92.27% of officer cadets joining the army knew that the service requires sacrifice. 73.71% of the respondents indicated that they were aware that such a situation might occur in which they would have to risk their lives and health while fighting the epidemic. Therefore, declared awareness of the role played by the military during the pandemic was high. Moreover, 63.14% of the respondents stated that they perceive the execution of the orders issued by their superiors during the pandemic as the fulfilment of their social obligation. In the authors' opinion, if we recognise a belief in the organisation as morale, this area was also positively influenced because, as declared by 47.68% of respondents, their trust in their colleagues increased. However, morale creates a system of vessels connected with others. Despite the noticeable increase in mental involvement of officer cadets in the military service due to the pandemic, morale was also affected negatively due to imposed restrictions. However, it is impossible not to notice opinions that express dissatisfaction with this state of affairs. The fact is that the way officer cadets leave the commander of the unit regulates their accommodation. They might feel they have been treated differently from the professional staff who left their place of service every day and went to their families and homes. Suppose we point to people with more rights or freedom functioning in the environment of people whose equal rights or liberties have been restricted. In that case, it could be indicated that this

situation is a source of antagonism between them. University authorities noticed such a situation in due time, and staff up to and including company commanders was barracked together with the officer cadets. Thanks to this decision, the officer cadets could see that they were not treated worse or better than the professional staff. From the perspective of participatory observation, the time spent with other officer cadets should be considered the most morally elevating for young soldiers. It was the first time that they had the opportunity to be with their supervisor for such a long time without interruption. The officer cadets' opinions gathered in the interviews conducted by the authors showed that they recognised their superiors as equals. Their only differences were the military rank and the scope of responsibility for the decisions made. There was also mutual respect associated with sharing the hardships of isolation, which contributed to the rise of authority. It is crucial to distinguish between functioning in peacetime and crisis. In peacetime, cadets enjoy cultural and social life benefits and can pursue their private life goals. However, the necessity of performance of crisis-time tasks may result in changes in everyday life and the functioning of the university. In the authors' opinion, it is vital to emphasize the bond development between superiors and subordinates due to joint problem-solving. It is not common for superiors to live with cadets and carry out new, unusual tasks apart from the training grounds and exercises.

The issue of morale and the performance of tasks in the field of crisis response by officer cadets is also worth mentioning. At various times during the pandemic, officer cadets were designated to perform official tasks for the local communities. The vast majority of officer cadets thus involved in anti-pandemic activities assessed it positively. In the opinion of the authors, this was since values such as the possibility of helping other people, confirmed by data on the need for various types of social assistance, or the positive effects of the introduced anti-pandemic measures seen by officer cadets, made it possible to build the authority of superiors and conscious attitudes of respective levels of command. This area of officer cadet activity should be summed up with an important conclusion regarding morale.

The authors' research shows that the superiors' attitudes influenced the subordinates' performance of duties. Based on subjective opinions, it should be noticed that those people who directly performed activities related to combating the pandemic or counteracting its effects, together with their superiors, established a special bond with them. The emergence of demanding situations and unconventional decisions in the command process cement the relations between superiors and subordinates, thanks to which they can get to know each other. Therefore, it can be concluded that, in extreme situations, the supervisor will be able to count on proper action on the part of subordinates.

That was also the case at the time of designation to territorial defence subunits. Officer cadets, more than once, had to face new challenges and performed tasks intended to be completed by officers. This was due to the belief in the necessity to carry out the anti-pandemic missions assigned to MUT and the will to gain the knowledge indispensable to carry out these missions. This unexpected and unintended situation reminded them that the military's morale resulting from relations with superiors is rooted in authority.

In the authors' opinion, in peacetime, military authorities make dangerous attempts to limit themselves to the formal authority that is determined by the subordination of soldiers, occupation of a specific official position, and military rank. Difficulties and crises prove that having material authority, resulting from the broader characteristics of a specific person, allows for the effective performance of these tasks even in the face of a threat to life or health. In addition, the allocation of the armed forces in the crisis management system or building a service ethos should be considered if one would like to achieve an even greater increase in morale in service activities.

Summary

The COVID-19 pandemic posed a considerable challenge to military education in Poland. However, conclusions must be drawn from this experience. Some of the after-effects of military socialisation, morale, or military education will remain in the education system for long periods. It is worth emphasising the positive aspects of the range of the above-mentioned changes. The popularisation of distance education or the increase in social competencies and, thus, also empathy among soldiers are just some of the positive elements brought about by the pandemic.

The case of military education during the pandemic shows that despite the disruptions, a difficult pandemic situation, and changing legal and organisational solutions, it is possible to achieve most of its primary goals, i.e., educate future officers. Educating these personnel has changed its vector over time due to the pandemic, but these positive areas are worth highlighting. Military studies at the time of the pandemic underwent much change. It should be recognised as a kind of compromise that, after the pandemic, military studies will be different from before. At the same time, the educational process will continue to achieve the goal of educating the armed forces personnel.

Endnotes

[1] E. Long, S. Patterson, K. Maxwell, et al, COVID-19 pandemic and its impact on social relationships and health, J Epidemiol Community Health 2022;76: 128-132.
[3] Regulation of the Minister of National Defense of March 11, 2020, on the temporary limitation of the operation of military universities supervised by the Minister of National Defense due to the prevention of SARS-CoV-2 infection.
[3] P. Ostolski, The evolution of the polish military educational system (part II), Defence – Scientific Quarterly of Management and Command Faculty, nr 4(20), 2016: 28-39.
[4] Decision No. 88 / MON of the Minister of National Defense of 30 June 2020 on the Military Education Standard for officer candidates - minimum program requirements.
[5] Order of the Rector of the Military University of Technology No. 22/RKR/2020 of March 12, 2020, on measures to prevent and monitor the spread of the SARS-CoV-2 virus.
[6] W. Horyń, J. Maciejewski, Andragogy and dispositional groups of socjety, Wrocław 2010, 64-73.
[7] A. L. Coser, Greedy Institutions. Patterns of Undivided Commitment, New York–London 1974, 4.
[8] E. Coppola, Christine McCall et al, Understanding the Challenges and Meeting the Needs of Military and Veteran Families, Research Policy Brief – Executive Summary, National Council on Family Relations, vol. 5, Issue 1, February 2020.
[9] M. Mikiciuk, Military Family, A sociological study, Warsaw 1989, 251-252.
[10] A. Baranowska, The war of two worlds ..., about the relationship between the profession of a soldier and family. Contribution to Research, Culture and Education, no. 4(97), (2013): 194-210.
[11] R. Moelker, I. Kloet, Military Families and the Armed Forces. A Two-Sided Affair? Handbook of the Sociology of the Military, G. Caforio (red.), New York 2006, 201-220.
[12] P. Topol, Remote education methods and tools at Polish universities during the COVID-19 pandemic - part 1, Discussion 2020, Educational Studies no. 58/2020, 69-82.
[13] Based on a survey conducted among 388 MUT cadets in 2022 by the authors.
[14] G. Caforio, Military Officer Education, Handbook of the Sociology of the Military, G. Caforio (red.), New York 2006, 255-257.
[15] M. Kuczabski, Psychology of threats and security, War Studies University, Warsaw 2021, 277-283.
[16] https://www.wojsko-polskie.pl/wat/articles/aktualnosci-w/2020-11-043-podchorazowie-wat-wspiera-ja-sanepid-w-walce-z-koronawirusem/.
[17] https://www.wojsko-polskie.pl/wat/articles/aktualnosci-w/2021-05-07q-podchorazowie-zaangazowani-w-pomoc-w-warunkach-pandemii/.
[18] W. Horyń, Military environment and shaping the personality of officer cadets; Wrocław 2004, 136-146.
[19] L. Tolstoy, War and Peace, The Project Gutenberg eBook of War and Peace, translated by L. & A. Maude, April 2001 [release date], https://www.gutenberg.org/files/2600/2600-h/2600-h.htm#link2HCH0063, Book Fourteen, Chapter II.
[20] P. Akropov, The offensive of Russia and the new world," https://web.archive.org/web/20220226051154/https://ria.ru/20220226/rossiya-1775162336.html.
[21] At a Glance, Russia's war on Ukraine: Military balance of power, European Parliament, March 2022, https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729292/EPRS_ATA(2022)729292_EN.pdf.
[22] A. Orlova, The Icon of Ukrainian Resistance: Azovstal Defenders Released From Captivity, KyivPost, September 2022, https://www.kyivpost.com/ukraine-politics/the-icon-of-ukrainian-resistance-azovstal-defenders-released-from-captivity.html.
[23] A. S. Stouffer, E. A. Suchman, L. C. DeVinney, S. A. Star, R. M. Williams, The American Soldier: Adjustment during army life, Princeton University Press; 1949, 3-5.
[24] Thomas J., The Four Stages of Moral Development in Military Leaders, The ADM James B. Stockdale Centre for Ethical Leadership, United States Naval Academy, 2010; p. 1-12.
[25] M. Cieślarczyk, A. Kołodziejczyk, Factor X. Morale in personal life in social and professional activities, Warsaw 2019, 219-226.
[26] M. Kopczewski, Z. Grobelny, A. Dąbek, Determinants of youth motivation for military service, Military Land Forces Academy, Wrocław 2020, 45-54.

13

STRATEGIC COMMUNICATION AND SECURITY FORCE ASSISTANCE: CRITICAL COMPONENTS FOR UKRAINIAN SUCCESS AGAINST RUSSIA?

OLGA R. CHIRIAC, JAHARA „FRANKY“ MATISEK

▶ **Authors:** Dr. Olga R. Chiriac: Title VIII State Department Research Fellow, Middle East Institute, Washington DC; Associated Researcher, Center for Strategic Studies, Bucharest.

Lieutenant Colonel (Air Force) Dr. Jahara „Franky" Matisek: Military Professor, Department of National Security Affairs, U.S. Naval War College, Newport, RI; Senior Fellow, Homeland Defense Institute, U.S. Air Force Academy, Colorado Springs, CO; Fellowship Director, Irregular Warfare Initiative at the Modern War Institute, West Point, NY.

This article was supported by the Air Force Office of Scientific Research under award number FA9550-20-1-0277. The views expressed are those of Lieutenant Colonel (Air Force) Matisek and do not reflect the official position of the U.S. Air Force, U.S. Naval War College, Department of Defense, or U.S. Government.

▶ **Abstract:** The 2022 Russian invasion of Ukraine is a pivotal moment in strategic competition between the U.S. and Russia and their respective allies and partners. A defining element of this conflict is defending the rules-based order and the European security architecture anchored along transatlantic ties. This paper explores two elements of these transatlantic security bonds: Instrumentality of strategic communication (StratCom) and security force assistance (SFA). We argue that StratCom – a mix of information warfare, public affairs, and public relations – and SFA (i.e., helping make another military more effective) have been mutually reinforcing elements, critical for Ukrainian success thus far. Political and military leaders must master the art of strategically conveying narratives to their armed forces and civil society while tailoring foreign messaging with clear StratCom approaches meant to leverage information space opportunities at the strategic, operational, and tactical levels.

▶ **Problem statement:** What is the value of aligning narratives at the strategic, operational, and tactical levels, ensuring economic and military aid flows to Ukraine?

- **Bottom-line-up-front:** The Russo-Ukraine War (2014-Present) has demonstrated the importance of Strategic Communication and Security Force Assistance. It is crucial to understand how interdependent these two approaches have been in generating critical narratives of Ukrainian battlefield success

- **So what?** The success of Ukraine on the physical battlefield and in the digital space demonstrates the conceptual value of what war-fighting looks like in the New Battlespace. In the Information Age, traditional domains like air, land, and sea remain relevant. Still, less traditional domains like cyber, outer space, and civil society, become equally crucial components in 21st-century warfare because each is highly interconnected and dependent on one another. Policymakers and military leaders must alter their approaches to strategic competition to leverage each domain in pursuit of objectives against adversaries.

Introduction

On 15 February 2022, deputies of the State Duma of the Russian Federation voted to support the resolution "on the appeal of the President" and the "need to recognize the Donetsk People's Republic (DPR) and Luhansk People's Republic (LPR)."[1] One week after this resolution passed the Duma, in his 21 February address, President Putin played out an alternative version of the situation in Ukraine, one in which he emphasized a common "history, culture and spiritual space."[2] By the morning of 24 February, Putin took to TV once again, announcing the initiation of a "special military operation" to "demilitarize" and "denazify" Ukraine. Such events are likely to re-shape the post-Cold War international. Moreover, political and military leaders are rethinking how their armed forces should function in the new battlespaces. The Information Age of warfare places increasing value on using non-kinetic capabilities to influence and shape battlefields and audiences around the world.[3] Months into the conflict, the international community, and especially the West, are astonished by the resolve and effectiveness of the Ukrainian Armed Forces (UAF) against a numerically superior aggressor. Naturally, the question arises, which elements contributed to said resolve and effectiveness, and are there any lessons that can be drawn from the example of the ongoing Russo-Ukrainian war?

Within the geopolitical context of Russia reasserting itself in Eastern Europe and the U.S. reinforcing the rules-based order, this article explore two major components of the transatlantic security "bond": The instrumentality of strategic communication (StratCom) and security force assistance (SFA). First, StratCom is about employing information warfare, public affairs, and public relations – to achieve influence and alter perceptions more favorably. Ukrainian officials, formally and informally, have effectively generated narratives about Russian aggression, atrocities (e.g., "Butchers of Bucha"), and their military incompetence.[4] Such efforts have ensured most western audiences – and their political leaders – keep supporting the Ukrainian government, civil society, and military. Secondly, since the Russian "Little Green Men" events of 2014, sixteen western countries have bilaterally provided SFA to Ukraine. Such train, advise, assist, and equip missions to UAF via formal mechanisms (e.g., training courses, weapon deliveries, etc.) and informal channels (e.g., secure messaging on Signal; sharing of information, intelligence, manuals, etc.), has increased militarily effectiveness. Moreover, such SFA has contributed to Ukrainian military leadership capabilities – with Ukrainian forces exhibiting higher levels of morale – while enabling a mix of Ukrainian forces (e.g., special operation forces, soldiers, volunteers, territorial defense units, partisans, foreign fighters, civil society actors, etc.) to outperform Russian forces.[5] Most remarkable, the emergence of informal SFA (i.e., unofficial communication, donations, etc.) has enhanced UAF effectiveness. This has enhanced capabilities, ensuring UAF have higher morale, better discipline, and more willpower to fight compared to Russian troops, which have been deserting at high rates in Ukraine.[6]

Combined, Ukrainian StratCom and Western SFA, have proven mutually reinforceable positions within the broader framework of the war as Ukrainian messaging has ensured steady flows of Western economic aid, intelligence, weapons, and training. In turn, Ukrainian StratCom abilities have reinforced positive Ukrainians narratives about such Western assistance being put to effective use against a belligerent Russia. Military leaders of today and tomorrow must master the art of strategically conveying narratives to their armed forces as well as civil society and political leaders, domestically and globally. StratCom, when properly employed in the new battlespace, ensures effective messaging to audiences domestically and globally. Additionally, effective StratCom requires planning at the strategic, operational, and tactical levels for gaining desired influence outcomes. Achieving unity of effort across all three levels enables lines of effort to attain objectives against an adversary.

StratCom is instrumental in building trust, confidence, and credible deterrence. Carefully crafted communication can also act as a tool for shaping attitudes and perceptions of domestic and global audiences. Similarly, StratCom is an effective non-kinetic weapon against an enemy and its supporters, while making adversarial influence initiatives less effective. What is said or, conversely, what is not said, are ‚signals' to allies, partners, and adversaries. The way information is disseminated impacts modern war in its totality, be it for reasons of deterrence or compellence. Moreover, the internet and advanced communications has given way to cognitive warfare, which are digital and virtual "activities undertaken to manipulate environmental stimuli to control the mental states and behaviors of enemies as well as followers in both hot and cold wars."[7] Such StratCom actions – when combined with other instruments of national power – can be synergetic, influencing the minds of supporters through tailored messaging that shapes the information environment.

Narrative Warfare: Influence Operations shaping audiences globally

Influence operations – including weaponized narratives and cognitive warfare – are by no means a new way to conduct war.[8] Ukraine has been a perfect example of how Russia has weaponized narratives to legitimize their illegal annexation of territory and brutal 'denazification' behavior. Simultaneously, the Russo-Ukrainian conflict has illustrated how powerful influence campaigns are, how important preparedness is to counter them, and how instrumental social media can be in achieving strategic goals. Through effective StratCom, Ukrainians have seized the digital high ground with weaponized narratives. This has facilitated the isolation of Russia while enabling western aid flows to Ukraine.[9]

The internet and social media enable low-risk, cheap StratCom operations against an enemy and their supporters.[10] NATO identified the power of influence operations by establishing the NATO Strategic Communications Centre of Excellence in Riga, Latvia. The Centre defines StratCom as "the coordinated and appropriate use of NATO communications activities and capabilities in support of Alliance policies, operations and activities, and in order to advance NATO's aims."[11] While this is an all-encompassing definition, it can be best distilled as "it is not what you say, but how you say it and when you say it" in such a way to achieve objectives. Hence, when it comes to influence and persuasion, there are four pillars: "knowing your purpose, understanding your audience, selecting an appropriate message structure strategy, and identifying the appropriate channel."[12] Finally, informational influence is best defined by the American Psychological Association as "interpersonal processes that challenge the correctness of an individual's beliefs or the appropriateness of his or her behavior, thereby promoting change."[13] This influence may occur directly, as a result of communication and persuasion, or indirectly, through exposure to information and comparison of oneself with others.

Strategic Shaping through Weaponized Narratives

A major reason why Russian Armed Forces failed to achieve initial political objectives in Ukraine is due to years of Western SFA, which facilitated the creation of effective UAF combat power and political willpower for Kyiv to resist Moscow. Initial Ukrainian narratives centered on freedom, sovereignty, and a nationalist identity. Such efforts were tied to pursuing simple political goals: the survival of the Ukrainian state and the nation. Nevertheless, the invasion of Ukraine is part of a broader Russian ideological war against the Euro-Atlantic community and its security architecture.[14] Before invading, draft treaties presented to the U.S. and NATO by the Kremlin attempted to limit transatlantic security ties.[15] Western leaders wasted their time trying to 'interpret' such drafts, but they were illusions of grandeur provided by "leaders in Moscow attempting to reestablish Soviet Union 2.0."[16]

In the months leading up to the Russian 2022 invasion of Ukraine, the U.S. intelligence community released specific, timely intel regarding Russian intentions. Unfortunately, many European leaders hurried to the Kremlin to appease Putin and "negotiate the war away," instead of pursuing effective StratCom campaigns through speeches, social media, memes, and conventional media. The lack of Western unity signaled weakness to Russia. Leaders in Moscow had discerned similar Western apathy before invading Georgia (2008) and Ukraine (2014). Much like other Eastern European cultures in general, Russia does not respect weakness, flexibility, or negotiations without the threat of violence.[17] Winning the war of narratives is why Russian convinced themselves that their 2022 "special military operation" would succeed.

With social media growing in prominence over the last decade, Russia has tailored messaging to undermine the transatlantic community, amplifying societal divisions and polarizing politics. For instance, when the Taliban conquered Afghanistan in August 2021, the Kremlin flooded the information space in Ukraine with narratives of how the West would abandon Kyiv just like Kabul.[18] The imposition of pro-Kremlin narratives against neighbors fits a pattern of gray zone activities since the Bolshevik Revolution.[19] Even as the Soviet Union was nearing collapse, they conducted influence operations that encouraged revolution against the Romanian dictator Ceausescu. The goal was to depose Ceausescu and keep Romania within the USSR sphere of influence. These tactics still inform the Kremlin's information warfare playbook: create chaos and build a weaponized narrative of 'others' to create strife.

However, Russia eventually failed to keep Romania in its orbit because the average Romanian wanted relations with the West, which included numerous non-security benefits. The Kremlin failed to deter and prevent Romanian NATO accession because the Romanian education system and political leaders ensured the memory of the Ribbentrop-Molotov Pact. Relevant domestic discourse and narratives guaranteed the historical relevance of the Soviet Red Army marching through Bessarabia and Northern Bukovina, raping, killing, and pillaging. Russian military behavior was no different during the 2022 invasion of Ukraine (e.g., Bucha, Bersiaka, etc.).

Even after Romania joined NATO in 2004, the Kremlin continued information operations against Romania. However, with NATO Article 5 protection, Moscow utilized options below the Article 5 threshold. A similar Russian modus operandi was established against Estonia through the cyber-attacks of 2007, and in many other eastern European countries.[20] The logic cannot be missed that Russia decided to invade Georgia and Ukraine on the eve of discussions about these countries beginning their roadmaps to NATO accession in 2008 and 2014, respectively. Such Russian signaling has been projected against neighbors showing signs of shifting towards Europe or the U.S.

Narratives are a powerful weapon via the internet, shaping the human domain in ways not possible in the pre-internet age.[21] For instance, on 4 September 2022 tens of thousands of protesters gathered in Prague to protest against their pro-West government. Protesters aired many pro-Kremlin narratives about high energy prices in Europe because of support for Ukraine.[22] While the Czech Republic is a member of NATO and the EU, Russian hybrid warfare actions stoke societal angst across Europe. When weaponized narratives are applied consistently over a long period, they affect human cognition and implicitly influence decision-making at all levels across civil society and government. Cognitive dissonance

remains an effective approach for the Kremlin in dividing and polarizing NATO countries. Former Warsaw Pact members joined NATO because they wanted protection from Russian repression and control. Europeans without personal experience living under Soviet rule are more likely to entertain Kremlin narratives about NATO being an American tool for maintaining rule over Europe and provoking Russia. In a September 2021 interview with Lithuanian StratCom officials, they described how Russia had weaponized immigration against the EU, especially the Baltic states. Officials provided evidence of Russia using social media advertising, which encouraged immigrants to fly to Belarus, where they were bussed to EU borders to create issues.

Dis-, mis-, and mal-information activities are non-kinetic ‚thought bombs' that are not perceived as national security threats in Western capitals. Hence, it is difficult to mobilize support and policies to defend against since it does not conceptually cross the 'red line' of a conventional attack. Moreover, one European country being shaped through Russian influence operations can have a domino effect on neighbors.

Social Media in Modern Competition

Ukrainian StratCom success has been a crucial element of current UAF counteroffensives against Russian forces occupying Ukraine. From the beginning of the conflict, Ukrainian soldiers and civilians posting live on TikTok and Instagram kept the international community alert to Russian movements across their country. Simultaneously, social media posts of Russian military movements normalized open-source intelligence (OSINT) sharing, making it difficult for Russian forces to move covertly, and also communicated to Ukrainians – and global citizens – that the fight was worth fighting. Such actions enabled high Ukrainian morale, despite initial Russian advances. As few journalists were on the ground when the war began, many conventional media outlets used OSINT posts to keep their audience updated. Later on, the UAF dropped surrender leaflets on Russian positions with a QR code, with the message of "Your ticket to a peaceful life. Show this card to a Ukrainian soldier - it will save your life and help you get back home."[23] While such propaganda messaging is as old as the 1870 Franco-Prussian War, advertising these actions on social media further shapes and influences the information space against an adversary.

Influence and shaping operations throughout social media can be a double-edged sword since the validity of the posts can be questionable. The visual impact of seeing wounded Ukrainian civilians or of Russian troops being unable to cross a river sends powerful messages to global audiences interested in the outcome of the Russo-Ukraine War. The Ukrainian military's sinking of the Moskva is a good example. While Moscow-backed

Ria Novosti reported 14 April 2022 "The cruiser Moskva sank while being towed during a storm," the UAF announced their role in destroying the Moskva, the symbolic jewel of the Black Sea fleet.[24]

As the UAF conventionally defends their homeland they simultaneously engage in StratCom operations, ensuring positive narratives that reinforce the need for continued economic and military aid. National instruments across the DIME (Diplomatic, Information, Military, Economic), are synchronized by the Ukrainian government in keeping Western audiences and governments engaged to ensure aid and support continue flowing into the country. Ukrainian civil society has also been vital in keeping audiences engaged through social media posts, to include pictures and videos, meant to go viral. Such informal StratCom by civil society enhances the formalized StratCom actions of the Ukrainian government and military. Ukrainian OSINT hobbyists like InformNaplam, facilitate the bridging of the gap between Ukrainian audiences and global netizens by them scouring information on the Russian military and translating it into English so that more prominent OSINT outlets like Bellingcat can use it to piece together damning intelligence reports about the Russian military and its conduct.[25] Other StratCom efforts elevate public discussions about rebuilding Ukraine after the war. It influences Western audiences from whether their governments should provide aid towards a narrative of how much their government should provide to Ukraine as part of a 21st-century version of the Marshall Plan.[26]

Formal and Informal Aid to Ukrainian Forces

Even before the Color Revolutions swept across Central and Eastern Europe after 2004, the U.S., UK, and certain NATO members had been working with the Ukrainian government and military since 1991, per a UK government report, to foster and assist with "defence reform, defence planning and capacity building."[27] In 1993, the California National Guard via the U.S. National Guard State Partnership Program, codified a relationship with the UAF with "many objectives, including helping the nations become more interoperable with NATO forces, helping the partners become more transparent in military affairs and, perhaps most importantly, helping the nations know how a military works in a democracy."[28] From 2000 until the February 2022 invasion, the U.S. provided the bulk of western SFA to Ukraine, including almost $2.8 billion in security assistance, about 16,000 Ukrainian troops trained, and over $700 million in arms sales[29]. The Russian invasion of Ukraine drastically changed this rate. Per the Ukraine Support Tracker at the Kiel Institute for the World Economy, Ukraine has received over $25 billion in U.S. security assistance, with other large notable military aid provisions from: UK ($4.05 billion), Poland ($1.8 billion),

Germany ($1.2 billion, and Canada ($930 million). More notable are the above-average contributions of smaller states. Estonia (0.9% of GDP), Latvia (0.9% of GDP), Poland (0.6% of GDP), Lithuania (0.4% of GDP), and Norway (0.4% of GDP) have provided the most support (as a percentage of their GDP) to Ukraine.[30]

It is important to demarcate the time it took for larger amounts of SFA to flow towards Ukraine after the 24 February 2022 invasion. For instance, the Biden administration only committed $350 million of military aid to Ukraine two days after the invasion.[31] This is because "In the days leading up to the war, the intelligence community told [American] policymakers that Kyiv would likely fall within three to four days of a Russian invasion."[32] By 8 March, the political willpower came as there were "growing calls in Washington for the CIA and the Pentagon to support a potential Ukrainian insurgency."[33] By 11 March, a U.S. defense official noted that the "Russians did not expect the ferocious defense by the Ukrainian military and Ukrainian civilians."[34] The following day, the U.S. pledged $200 million,[35] and another $800 million in military aid on 16 March.[36] Such SFA came flowing due to a flurry of videos, memes, and StratCom activities by the Ukrainian government and civil society that highlighted Russian "blunders, [and] stiff Ukrainian resistance."[37]

Even though the Ukrainians initially sacrificed large swaths of territory, Russian forces became overextended with their logistics and artillery, which allowed the UAF to easily ambush Russian troops. Meanwhile, UAF and OSINT hobbyists filmed and captured much of these events, such as the infamous "40-mile-long armoured military column of tanks and heavy weaponry near the Ukrainian capital Kyiv for days" that was constantly ambushed, as some Russian troops froze to death in the stalled convoy.[38] Such a timeline of events demonstrates how initial SFA contributions before the war, such as Javelin and NLAW anti-tank missiles and anti-aircraft Stinger missiles, stalled Russian advances. UAF videos of these western weapons employed effectively against Russian forces spread throughout social media, shaping and influencing views about UAF capabilities. It provided enough evidence to policymakers in Western capitals to unleash waves of economic and military aid to Ukraine. Meanwhile, purposeful Ukrainian StratCom elevated narratives of unity and UAF bravery in standing up to a supposedly larger, better-equipped Russian military. Once the battle of Kyiv concluded on 31 March with the UAF victorious, international journalists and OSINT hobbyists identified numerous war crimes committed by occupying Russian forces, which further enhanced anti-Russian narratives through images of atrocities via social media that cemented western support to Ukraine.

Beyond aid and codified bilateral security relationships between western countries and Ukraine, in 2016, the militaries of Lithuania and Poland formed a military unit with the UAF. Known as the Lithuanian-Polish-Ukrainian Brigade (LITPOLUKRBRIG), this trilateral military unit is jointly based in Lublin, Poland, capable of commanding 4,500 troops for joint combined military operations.[39] Moreover, based on a 23 August 2022 interview with the LITPOLUKRBRIG Commander, his unit functions "outside of the NATO umbrella," which means their unit can engage in some informal military activities with the UAF that formal NATO military units are unable to do. Such informal SFA occurs within this space as LITPOLUKRBRIG personnel utilize first-hand intelligence reports from Ukrainian troops to inform and improve the training courses and military exercises that the LITPOLUKRBRIG regularly conducts.

The power and value of informal SFA is missing from most academic research and literature. This is because informal SFA – such as advising and assisting without an explicit mandate – is more common than is assumed, not to mention difficulties tracking since military members typically do not report or tabulate the times in which they provide advice and guidance to a partner or allied military. For instance, in a 23 July 2022 interview, one U.S. service member described his time commanding an airfield in Qatar, where he commanded the airfield but spent more of his time advising Qatari military personnel on how to conduct their airfield operations. This type of informal SFA equally happens to deployed peacekeepers across Africa and the Middle East, where commanders of peacekeeping units have an explicit mandate for peacekeeping operations. Still, they spend more time consulting and advising host-nation military leadership on best practices, such as coordination and planning activities. Just through simple training courses and military exercises, when joint military forces work with one another, osmosis occurs, where best practices are developed to enhance professionalization among all participating military personnel.

Conclusion

According to Max Boot, there are four reasons why the Ukrainians have been so successful: (1) Western aid, (2) unity of Zelensky's government, (3) "ingenuity, skill and fighting spirit of its armed forces," and (4) "corruption and stupidity of the Putin regime."[40] However, Boot omits the most crucial factor that has tied all four into a cohesive narrative, namely the value of StratCom. Robust pro-Ukrainian social media campaigns, alongside elite narratives, have vitally enabled Western SFA flowing formally and informally to Ukrainian forces. Moreover, Ukrainian narrative warfare has provided a singular voice of Ukrainian unity against Russia while equally showcasing the corrupt conduct of Russian political and military leadership.

As Clausewitz astutely identified the importance of government, military, and people in war, the Russo-Ukraine War has showcased a new battlespace where internet connectivity enables citizens around the world to participate in the war (i.e., informal SFA and StratCom, OSINT, etc.) or be shaped through desirable narratives. Successful Ukrainian StratCom has been utilized in unison with combat operations, ensuring internal cohesion while supporting transatlantic security ties. European militaries and NGOs should collectively function as a defensive community to shape the new battlespace because of the value of democratic, open systems that can operate more organically against authoritarian countries like Russia. Thus, any politician, citizen, or soldier can be a digital warrior because anything and everything will be weaponized, as anyone who uses the internet or engages in social media discussions is now a combatant in sociopolitical-information warfare.[41]

Russian leaders present 'reimagined' history and engage in revisionism to condition the world into an alternative version of events. President Putin provided his own vision of past, present, and future in his 12 July 2021 letter to Ukraine, stating Ukrainians and Russians as "one people" and that the "true sovereignty of Ukraine is possible only in partnership with Russia. Our spiritual, human and civilizational ties formed for centuries and have their origins in the same sources."[42] Such imperial ambitions and narratives by Putin made clear his StratCom narratives to domestic and international audiences. The arrogant view of Russian dominance over Ukrainians, the letter provided the veneer of legitimacy for Russia's invasion of Ukraine.

The only way to prevent revisionist authoritarians from trying to 'reset history' is to ensure education systems, both military and civilian, are proactively discrediting any attempts by leaders – domestic and foreign – that attempt to revise and alter reality. Since the invasion, President Zelensky made country-specific historical references in many speeches. This form of StratCom works because it keeps historical facts anchored in truth. Each reference is a reminder of Ukrainian sovereignty and their role in defending the European flank and rules-based international order.[43]

Finally, given that the survival of Ukraine and the transatlantic security community is dependent upon the U.S. – and somewhat on the UK, Germany, France – institutions like NATO must move beyond symbolic connections and interactions. There needs to be more formal and informal security cooperation, mentorship between NATO allies, and security cooperation with non-NATO militaries. Regardless of the Russian threat, the longer-term threat to NATO is China. Since 2019, NATO has been trying to pivot its resources, strategic thinking, and security cooperation to countries in the South China Sea region.[44] A future

crisis involving China will necessitate Western political and military leaders implementing reforms based on Russo-Ukraine War lessons learned, especially SFA and StratCom.

Endnotes

[1] "The deputies supported the resolution on the appeal to the President of the Russian Federation on the need to recognize the DPR and LPR," State Duma of the Russian Federation, February 15, 2000, http://duma.gov.ru/news/53431/.
[2] "Address by the President of the Russian Federation," The Kremlin, February 21, 2022, http://en.kremlin.ru/events/president/transcripts/67828.
[3] Jahara Matisek and Buddhika Jayamaha, Old and New Battlespaces: Society, Military Power, and War (Boulder, CO: Lynne Rienner Publishers, 2022).
[4] For example, see: https://www.aljazeera.com/news/2022/6/3/eu-blacklists-bucha-butchers-in-latest-russia-sanctions.
[5] Christina L. Arabia, Andrew S. Bowen, and Cory Welt, "U.S. Security Assistance to Ukraine," CRS, October 21, 2022, https://crsreports.congress.gov/product/pdf/IF/IF12040.
[6] Zoe Strozewski, "Russian Force Sees ‚Mass Desertion' Amid Putin's Recruitment Push: Report," Newsweek, September 08, 2022, https://www.newsweek.com/russian-force-sees-mass-desertion-amid-putins-recruitment-push-report-1741284.
[7] Tzu-Chieh Hung and Tzu-Wei Hung, "How China's Cognitive Warfare Works: A Frontline Perspective of Taiwan's Anti-Disinformation Wars," Journal of Global Security Studies 7, no. 4 (December 2022): https://doi.org/10.1093/jogss/ogac016, published: July 19, 2022.
[8] Koichiro Takagijuly, "The Future of China's Cognitive Warfare: Lessons from the War in Ukraine" War on the Rocks, July 22, 2022, https://warontherocks.com/2022/07/the-future-of-chinas-cognitive-warfare-lessons-from-the-war-in-ukraine/
[9] Laura Keenan, "How Ukraine Seized the Initiative on the Digital Front of the War with Russia," Modern War Institute, September 01, 2022, https://mwi.usma.edu/how-ukraine-seized-the-initiative-on-the-digital-front-of-the-war-with-russia/.
[10] John E, Shepard Jr, "Is Clausewitz Still Relevant?," Parameters: Journal of the U.S. Army War College 20, no. 3, 87.
[11] NATO Strategic Communications Center of Excellence, "About Strategic Communications," https://stratcomcoe.org/about_us/about-strategic-communications/1.
[12] June West, "Strategic Communication to Inform or Persuade," UVA Darden: Ideas to Action, February 12, 2015, https://ideas.darden.virginia.edu/strategic-communication-to-inform-or-persuade.
[13] APA, 2022, https://dictionary.apa.org/informational-influence.
[14] Ira Straus, "The war in Ukraine is an opportunity to upgrade the transatlantic architecture. Here's how," Atlantic Council, August 31, 2022, https://www.atlanticcouncil.org/blogs/new-atlanticist/the-war-in-ukraine-is-an-opportunity-to-upgrade-the-transatlantic-architecture-heres-how/.
[15] See: https://www.iiss.org/blogs/analysis/2022/01/russias-new-draft-treaties-like-2009-but-worse
[16] This phrase was used by a Latvian deputy defence minister during interviews, September 24, 2021.
[17] Timothy Frye, Weak Strongman: The Limits of Power in Putin's Russia (Princeton, NJ: Princeton University Press, 2022); Gregory Sandstrom, "Global sociology–Russian style," Canadian Journal of Sociology 33, no. 3 (2008): 607-630.
[18] Andrew Osborn, "Senior Russian security official questions U.S. commitment to Ukraine after Afghan exit," Reuters, August 19, 2021, https://www.reuters.com/world/europe/senior-russian-security-official-questions-us-commitment-ukraine-after-afghan-2021-08-19/.
[19] Jahara Matisek, "Shades of gray deterrence: Issues of fighting in the gray zone," Journal of Strategic Security 10, no. 3 (2017): 1-26.
[20] Chiriac and Matisek, "Homeland Defense in the Information Space."
[21] Matisek and Jayamaha, Old and New Battlespaces.
[22] Erika Soloman, "Protests in Prague Signal a Troubled Winter ahead in Europe," The New York Times, September 28, 2022, https://www.nytimes.com/2022/09/28/world/europe/prague-protests-economy.html./

[23] https://twitter.com/chuckpfarrer/status/1569402374015401987?s=46&t=GhouO56nJtisY6lfhmSOxg.
[24] "The cruiser „Moskva" sank while being towed during a storm," RIA News, April 14, 2022, https://ria.ru/20220414/kreyser-1783626130.html.
[25] https://informnapalm.org/en/.
[26] Ariel Cohen and Wesley A. Hill, "Ukraine's "Marshall Plan" Should Come with Transparency," Newlines Institute for Strategy and Policy, June 28, 2022, https://newlinesinstitute.org/ukraine/ukraines-marshall-plan-should-come-with-transparency/.
[27] Claire Mills and John Curtis, "Military assistance to Ukraine since the Russian invasion," UK House of Commons library, August 15, 2022, https://researchbriefings.files.parliament.uk/documents/CBP-9477/CBP-9477.pdf.
[28] https://www.nationalguard.mil/News/Article/2972128/ukraine-california-ties-show-worth-of-national-guard-program/.
[29] Security Assistance Monitor tracks all U.S. security assistance; see: https://securityassistance.org/map/.
[30] For most up to date information from the Kiel Institute; see: https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/.
[31] See: https://www.state.gov/additional-military-assistance-for-ukraine/.
[32] https://www.cnn.com/2022/05/13/politics/us-intelligence-review-ukraine/index.html.
[33] https://apnews.com/article/russia-ukraine-putin-biden-europe-avril-haines-5c9707de86165915e7ce9d10d18464f3.
[34] https://www.defense.gov/News/News-Stories/Article/Article/2959856/russian-invaders-crash-into-ukrainian-resistance/.
[35] https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/16/fact-sheet-on-u-s-security-assistance-for-ukraine/.
[36] https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/16/fact-sheet-on-u-s-security-assistance-for-ukraine/.
[37] https://www.defense.gov/News/News-Stories/Article/Article/2964269/russian-military-efforts-stymied-by-blunders-stiff-ukrainian-resistance-defense/.
[38] https://www.independent.co.uk/news/world/europe/russia-troops-convoy-freezing-death-b2031696.html.
[39] Jahara Matisek and Will Reno, "Meet the Lithuanian-Polish-Ukrainian Brigade, A Little-Known Unit that Presents a New Model for Security Cooperation," Modern War Institute, September 28, 2022, https://mwi.usma.edu/meet-the-lithuanian-polish-ukrainian-brigade-a-little-known-unit-that-presents-a-new-model-for-security-cooperation/
[40] Max Boot, "The 4 factors that explain Ukraine's extraordinary military success," Washington Post, September 12, 2022, https://www.washingtonpost.com/opinions/2022/09/12/ukraine-reasons-surprise-offensive-winning/.
[41] Olga Chiriac and Jahara Matisek, "Homeland Defense in the Information Space: Learning from Russian Influence Campaigns in Eastern Europe," Modern War Institute, October 19, 2022, https://mwi.usma.edu/homeland-defense-in-the-information-space-learning-from-russian-influence-campaigns-in-eastern-europe/.
[42] President Vladimir Putin, "On the Historical Unity of Russians and Ukrainians," President of Russia (official website), July 12, 2021, http://en.kremlin.ru/events/president/news/66181.
[43] Rayna Breuer, "Why Ukrainian leader Volodymyr Zelenskyy's speeches are so rousing," DW, June 07, 2022, https://www.dw.com/en/why-ukrainian-leader-volodymyr-zelenskyys-speeches-are-so-rousing/a-62049158.
[44] Pierre Morcos, "NATO's Pivot to China: A Challenging Path," CSIS, June 08, 2021, https://www.csis.org/analysis/natos-pivot-china-challenging-path.

14

THE COMMANDER OF TOMORROW

ANDRZEJ TRUSKOWSKI,
OCDT SZYMON KWIATKOWSKI

▶ **Authors:** Lieutenant Colonel (Air Force) Andrzej Truskowski, Ph.D., Vice-Rector for Education, Polish Air Force University in Dęblin. His research interests include Aviation tactics, Command and Control, and Combat use of the Air Force. Lieutenant Colonel Truskowski has published seven monographs and over thirty scientific articles on Aviation tactics, Command and Control, and Combat use of the Air Force; Academic fields: Aviation tactics, Command and Control of the Air Force.

Officer Cadet Szymon Kwiatkowski, M.Sc., Polish Air Force University in Dęblin. His Master's Thesis analysed and evaluated the Polish Armed Force's air transport abilities regarding its effectiveness and combat use. His military specialty is air transport pilot; his research interests include Air Power, Military Studies, and Aeronautical Engineering. The views contained in this article are the authors' alone and do not represent the views of the Polish Air Force University.

▶ **Abstract:** The war in Ukraine highlights the importance of the human factor in the effective operation of armed forces. General Mieczysław Bieniek, the former NATO Deputy Strategic Commander, observed on Polish Radio 24 that „the advantages of the Ukrainian army include the way of conducting military operations, its training and Western equipment at its disposal. Russians have an overwhelming amount of equipment, yet all that heavy machinery lacks a command system, interoperability, and, first and foremost, the human factor".1 This experienced commander claims that the most significant advantage of the Ukrainian army is „taking decisions/by commanders they do have this tactical independence at the company, battalion and battle group level, [...]".[2]Further on, he emphasises that Russians lack „... also the command system, interoperability, and, first and foremost, the human factor".[3] Leadership is the foundation of armed organisations since the very beginning. In the 6th century BC, the Chinese general and philosopher Sun Tzu claimed, „Leadership is a matter of intelligence, trustworthiness, humaneness, courage, and authority".[4] Leadership quality has been and still often is the cause of victory. A good commander should, first and foremost, be a leader with authority and respect among their personnel.

- **Problem statement:** How to prepare future military personnel for new, hitherto unknown challenges?

- **Bottom-line-up-front:** What command and leadership qualifications, understood as the ability to lead human resources, should a commander at the head of such an organisation have? If the primary goal of command is to create a well-coordinated and properly trained combat team, how should the commander influence the behaviour of subordinates to achieve this goal?

  Certain command and leadership qualifications—understood as the ability to lead human resources—are crucial for an effective commander to lead any military structure or organisation. Teaching future commander-leaders vital interpersonal, command, and leadership qualifications combined with advanced military knowledge will have an indispensable influence on subordinates' behaviour to create a well-coordinated and properly trained combat team.

- **So what?** Through conclusions drawn from contemporary conflicts and forecasts about their nature in the future, one can characterise the necessary qualities, abilities and skills of the future commander so that they can effectively lead their force in a future conflict. These skills and abilities comprehend high interpersonal effectiveness qualities within the social relationships as well as the self-management abilities being reflected within interpersonal skills allowing for effective fulfilment of one's intentions and tasks assigned in social interactions and having a crucial impact on managing others as both a commander and leader. It can also be assumed that educating and shaping future leaders must be oriented towards flexibility and adaptability in the context of modern battlefield dynamics.

Technology and Wars

Over the centuries, military analysts have sought answers to the same questions. What will future wars look like? What challenges will future armed forces have to face? What will future battles look like? How will technology change the battlefield, the types of wars, and thus their participants? How to prepare the future commanders so that they not only organise training activities in a military unit (or sub-unit) in times of peace but also, perhaps primarily, efficiently manage troops in war.

These and similar questions remain unanswered. It is only possible to determine the likelihood of the occurrence of conflicts and their course and potential consequences. Given this context, one can constantly search for a model which would be sufficiently adequate for such a concept of war.

Wars in the First Half of the 20th Century

War has been present in all centuries and civilisations.[5] Nevertheless, a commonly recognised definition does not exist. According to the most recently established definitions, war is not a purely military phenomenon but a total one encompassing internal and foreign policy, economy, and military operations. It follows that the definition of war includes social, historical, and class phenomena aimed at settling disputes and achieving political goals by resorting to violence. Therefore, war can be seen as not only a combat activity understood as a military operation but also a legal situation in which the existence of war is recognised.[6]

Future war is likely to be a highly complex, interdependent, and dynamic phenomenon that requires a systemic and comprehensive approach to analysis and assessment. Thus, its participants, driven by conflicting goals, actions, and motivations, should be determined. By applying the above-described criterion and relying on experience gained during previous wars and conflicts which occurred in recent years, as well as views expressed by political scientists and military theorists and students of war, one can suppose that in the future, the following types of war will be waged:

- asymmetric wars waged between state and non-state entities;
- inter-state wars in which states will participate;
- inter-civilisation war, especially on the border between civilisations[7] (the so-called civilisation wars).[8]

Considering the constant evolution of the structure, shape, and form of wars, one cannot exclude the emergence of other types of war whose properties are difficult to identify clearly. The literature includes classifications of future wars depending on their structure, shape, or form, such as the concept of Hybrid Wars. The construct first appeared in the American military strategy and was adopted by American analysts in military operations conducted in Afghanistan and Iraq.[9] The term was first used by MAJ W.J. Nemeth while describing the Russian-Chechen war. In his opinion, a hybrid war is a diverse way of perceiving a military force whose organisation reflects social and economic development and binding social norms with the simultaneous employment of modern technology in performing tactical and strategic operations.[10]

Concerning the characteristics of hybrid wars, there are several definitions among military theorists – Robert G. Walker defines hybrid warfare as a combination of rules typical for conventional war and special operations[11], whereas Col. John McCuen understands it as a combination of symmetric and asymmetric warfare.[12] Hybridisation can concern both the belligerent (state, non-state entity, irregular military group) and the area of a conflict (especially a battlefield), the background and nature of war (the conflict environment). It results primarily from the spatial and temporal coexistence of several generations of war, which intersect, permeate, and confront each other on the battlefield or in operations other than war.[13] Based on these definitions, a hybrid war can be considered a combination of tactical operations, terrorism, and crime, devoid of social norms and conducted through conventional and non-conventional means to reach objectives.

Referring to asymmetric wars again, a uniform and widely recognised definition of this warfare type has not been established. In Polish research, this concept is usually defined as actions "aimed at circumventing the enemy or undermining the source of his power by taking advantage of his weaknesses and employing strategies significantly differing from standard operating procedures used by the enemy".[14] Prof. Herfried Münkler believes that asymmetric wars will be given great significance in the 21st century.[15] Asymmetrisation of war is a clash of fundamentally different military and political strategies, which cannot be limited or regulated by international war. It entails moving war zones, redefining the means of conducting wars and employing new resources. The increasingly spreading globalisation exerts a substantial influence on asymmetric wars.

As a result, a nation-state or a group of states may face non-state transnational opponents (frequently not officially recognised and criminal), such as business corporations, paramilitary groups, terrorist organisations, organised crime, drug cartels, religious movements, mercenaries or parts of state armies. Consequently, a visible asymmetry between

belligerents is created. It concerns not only adversaries' military or technological capabilities, wealth, or development stage but also culture, ideology, views, identity, or faith. Therefore, the mode of operation typical to non-state entities is the use of violence against civilian populations so that considerable destruction is caused with minimum material resources. Such operations will be conducted in a scattered and fragmented way.

In asymmetric wars, identifying the enemy or choosing the correct method of operation can be difficult and sometimes even impossible. It is also challenging to determine the potential theatre of operation or distinguish a non-combatant from a guerrilla or insurgent. The beginning and end of an asymmetric war cannot be unambiguously established, as it might occur during a conventional war, where the political aspect is crucial for defining, e.g., the temporality of the conflict. As a result, the structures of asymmetric wars are vague and blurred. Therefore, one is justified to claim that asymmetric wars have acquired a new shape and left the battlefield.[16]

Asymmetric wars can be waged on different scales and dimensions, including the state, regional, and global scales. It becomes apparent that well-equipped armed forces are often ineffective when confronted with a less numerous and poorly equipped enemy who fights ruthlessly, taking advantage of surprise and attacking not direct targets like armed forces but indirect ones like the weak, vulnerable and open democratic society.[17]

Nowadays, factors such as access to up-to-date and reliable information, the use of manoeuvre and efficient command, surveillance and destruction systems are much more important than creating a material advantage, expressed in the number of soldiers, tanks or cannons. Therefore, it can be supposed that future wars will be waged by independent combat groups (task forces) capable of performing manoeuvrable, defensive and offensive operations. Their composition will be strictly adjusted to the situation and specific task. Those forces will not be numerous, but they will be active, mobile, flexible, and well-adaptable to changing environmental conditions. They will be connected using fast and safe IT networks allowing for efficient command and a high level of battlefield knowledge.

Describing the Russia-Ukraine war, General M. Bieniek points out differences in conducting this war by both belligerents. It can be claimed that the Russian Forces largely conduct armed operations, which still resemble a mass war. Conversely, Ukrainian Forces often conduct operations typical of the diffused war. General Bieniek notes that Ukrainian soldiers „see and hear more and farther than the Russian side. Their further advantage is taking decisions in small tactical groups – they do have this tactical independence at the company, battalion and battle group level (...)".[18]

Considering the above, it is impossible to rule out the participation of large armies and the existence of a linear armed conflict. Conventional wars still occur in the contemporary world, and presently, their characteristics are still (and should be in the future) included in all scenarios of organised military exercises. However, there is a lack of forward-looking scenarios, including trends defined in the security environment and the possibility of verifying capabilities and procedures in the face of new challenges. Such a scenario, complemented by determining the future nature of conflict, should be a primary challenge for strategists and curricula designers in military academies.

Challenges for Educating Future Leaders

In the English language, the words: lead, leader, and leadership derive from the Old English word lædan, which denotes a „path" or „road[19]". The verb leaden means „to travel". It follows that a leader is a person who walks in front guiding their travel companions. Thus, a leader can be perceived as a helmsman. A company can have all the possible advantages (enormous financial resources or ultra-modern technology). Yet, if its leadership is weak, all those values perish. If an organisation fails at the leadership level, then the organisation as a whole will fail.[20]

The quality of deliberations on the nature of leadership is influenced by multi-contextual social transformations which manifest themselves in the permanent creation of contemporary society, the nature of new qualitative changes in relations between globality and locality, society and an individual, an organisation and individual, and their interdependencies.[21]

Systematic attempts to classify leadership concepts and theories identify different types of leadership and reveal structural characteristics of leaders' personalities. B.M. Bass observes that there are three ways to explain the phenomenon of „becoming" a leader, they include: the Trait Theory (chosen personality traits may lead people naturally into leadership roles); the Great Events Theory (following a crisis or another life-changing event, an ordinary person can reveal their leadership qualities while adapting themself to the new situation); and the Transformational or Process Leadership Theory (people can decide if they are willing to become leaders and develop leadership skills).[22]

M.J. Michalak states that today the Transformational or Process Leadership Theory is the most widely accepted of the three. This has resulted in increasing theoretical and research efforts aimed at examining transformational leadership, whose potential reflects itself in the individual's proactive behaviour and influence on the cultural context

and changing the environment. These approaches „emphasise mutual relations between a leader, his subordinates and situation, [...] the effectiveness of leadership is dependent on such factors as a leader's personality, the values he champions, his experience, expectations and behaviour as well as subordinates' expectations, their behaviour, task requirements and organisational culture".[23]

Contemporary organisations, institutions and companies make future leaders face more demanding challenges. The old prototype of an authoritarian omniscient leader is being replaced with the new concept of a leader distinguished by hard technical skills and several non-technical soft ones.[24] Today, a leader perceived as a sensitive cultural architect is expected to foster acquiring knowledge within an organisation and prepare it for functioning in modified conditions. Forging relations between organisation members instead of only competing for power is becoming the primary objective of contemporary leadership.[25]

Considering that, the process of educating and shaping future commanders, which presently involves preparation in terms of hard skills—technical competencies connected with military expertise and leadership skills, which are a precondition for becoming a commander — should be complemented with soft skills (personal and social).[26] Soft skills enable leaders to achieve „hard" results. It may seem that the most pronounced benefits of soft skills are hard to quantify precisely. Even if the nature of many social competencies, such as leadership, exerting influence or forging trust-based relations, remains elusive, they merit our interest and consideration. Interpersonal skills—often considered competencies of the modern leader — are vital professional skills that help every employee, especially the leader, feel at ease in any organisation and in many different situations, including those commonly faced while performing military tasks. Soft skills are also connected with knowledge, abilities, and attitudes, ensuring efficient performance. However, compared to hard skills, they are indispensable for this performance in many different contexts, professional roles (e.g., commander-leader of tomorrow), and in various posts. Soft skills allow for flexibility and adaptability in a multitude of duties and assigned tasks. Soft skills comprise an overall capability ready to be applied in various situations.[27]

From the functional standpoint, soft skills ensure effective self-management (personal skills) and high interpersonal effectiveness (social skills). Soft skills are the foundation of every person's capability. They are essential for a leader preparing subordinates for difficult and dangerous operations because the lack of self-management and social skills often restricts or even renders successful performance impossible.

At this point, it is worth emphasising that the good manager, leader, or teacher should effectively, actively, and flexibly manage their soft skills depending on the conditions and circumstances of performance. To be more precise, a person should either be able to capitalise on a given soft skill when necessary or put aside a skill whose use might prove ineffective in a particular situation. The flexibility provided by capitalising on one's soft skills (called meta-competence[28]) is increasingly valued and systematically developed by excellent current managers, leaders, and teachers.

At this point, it is worth quoting K. Obłój, who notes that „employee's skills are the constituent part of an organisation's skills", while .... „each company is ultimately a cumulative knowledge possessed by former and current employees"[29] – as well as their experience and attitudes. Once again, it should be emphasised that people become good leaders. A leader is not born a leader–Field Marshal Gen. Bill Slim noted that "Leaders are more often made than they are born. You all have leadership in you. Develop it by thought training and by practice"[30]. In other words, being a leader is a matter of „becoming one", not a matter of fate, negligence, or pure chance. Further to this, A. Jago observes explicitly that „only if you have a desire and willpower can you become an effective leader". Good leaders develop themselves through a life-long process of self-study, learning, training and experience. Good leaders constantly work and learn to improve their leadership skills; they do not rest on their laurels".[31] At this point, one can risk a statement that leadership is everything an individual does to lead effectively.[32]

Thus, it seems justified to claim that natural-born leaders are rare commodities. It is more reasonable to conclude that leadership can be learned within a well-developed teaching and training process dedicated to preparing future commanders-leaders of tomorrow that would be conducted in authorised military organisations. Military service is a specific type of activity. It is inextricably connected with various demanding requirements (general and specialised), which often demand that personnel and their commanders perform effectively in difficult and dangerous situations. In such cases, dialogue and the free flow of information are often hampered. Therefore, there is a need in the military environment — especially in aviation — to develop relationship dialogues, both symmetrical and partnership relationships, instead of asymmetric relations, i.e., only official and formal ones, between a superior and subordinate. The necessity of creating properly established relationships, particularly in military aviation, stems from a solid core of cooperation between pilots within a multi-crew environment of a transport aircraft or in operations between a fighter controller and fighter pilot where symmetrical partnership is consistently enabled by dialogue and actions absent the features of reporting lines or traditional military subordination. This cooperation is exemplified by the Polish Air Force

saying, "the ranks do not fly" in other words, it does not matter if one crew member is a general and the other a cadet—they both have the same value as crew members and have the equal, symmetrical importance. Concerning different military branches and actions performed by the person operating any other advanced equipment, these actions are often a creative, collaborative, and, above all—a team process.[33] However, no team will effectively function without a good leader who is prepared to make decisions and successfully work with a team in standard and static situations and difficult and dangerous ones. Such skills can be acquired only in a military environment distinguished by an appropriate organisational culture that generates conditions for constant learning, training, and professional development of commanders-leaders of tomorrow.

The relationship between employee attitudes and organisational culture is complex and multi-dimensional. Therefore, its power and nature are conditioned by many indirect factors.[34] In the case of the military environment, it is critical to deliberate on the influence exerted by organisational culture. The military milieu is highly aware of such demands; however, it cannot sufficiently resist the pressure exerted by the conservative system (in opinions expressed, e.g., by air force personnel for a few years[35]). Because the military has to face the challenges posed by the modern battlefield, it can be claimed that personnel and their commanders are prepared to perform in conditions dominated by situations that generate stress. Preparing for such situations requires an environment imbued with a specific organisational culture. It seems that the most appropriate would be the strong organisational culture type found in most of the NATO air forces. A strong organisational culture is defined as a distinctive connection between fundamental principles and values, the whole structure in which official rules are complemented with unwritten standards, high employee skills, their involvement, a sense of worthiness, pride, and exceptionality associated with an occupied position and performed tasks, the crucial importance of social and communicative skills, huge responsibility, a feeling of autonomy, and treating personnel with respect and the profound significance of authority.[36]

Nevertheless, several actions and solutions typical of the weak organisational culture still hold sway in the Polish Air Force, for example, due to its resistance to those qualitative new ideas. The weak culture is fragmented, lacks common values, and its structure is unstable; formal rules and poor personal skills prevail; personnel lacks involvement, they feel ordinary and have little or no trust; social and communicative skills are of minor importance, and there is little or no responsibility. The prevailing features of such a culture are pressure, objectifying personnel and minor significance of authority or its lack.[37]

Considering strong and weak cultures, one is inclined to state that the influence of the former would ensure far more proper conditions for preparing personnel and commanders-leaders for effectively operating on the future battlefield. More specifically, if teamwork is important in a given organisation, a candidate's traits predispose them to work in a team are already emphasised at the application stage. Therefore, applicants are examined regarding their social and communicative skills and ability to cooperate in conflict situations. Those skills should be included in the education and training designed for commanders-leaders of tomorrow. Consequently, it is possible to achieve a goal that is characteristic of a strong culture.[38] In addition, positive pressure to follow those rules and values is exerted. Moreover, presented attitudes adhering to basic standards are constantly reinforced and maintained. On the other hand, the culture is adjusted to an organisation's profile and requirements, as well as the main objectives and tasks it performs.

Complex, Diverse and Dynamic

Given qualitative changes that have occurred in society and are bound to happen in the future, there must be an increasing significance placed on comprehensively preparing qualified commanders of tomorrow, suiting the challenges of the modern and future war theatre aspects. It should be emphasised that contemporary personnel and commanders must be prepared to cope with the future battlefield's complex, diverse and dynamic environment, different from the preceding surroundings known to the leaders and commanders of today. The future battlefield will be an environment requiring above-average intellectual acuity and physical fitness. Under these conditions, a commander-leader will capitalise on proper habits (i.e., habits connected with mastering the use of advanced military equipment and weapons) and competencies enabling them to manage their own and their subordinates' resources. Soft skills — non-technical, personal, and social — can play a significant role in the successful performance of commanders-leaders of tomorrow.

Therefore, the specific education, training, and professional development designed for candidates to fulfil such roles should include conditions that will make a military organisation acquire the biggest number of features defining a strong culture. Such education, training, and professional development are becoming a reality in the Polish Air Force.[39] This is confirmed by the Human-Machine Interface (HMI) aviation construct, which points to a man's "above-average" capabilities manifesting themselves, especially in their ability to predict how a situation will develop instead of only their immediate reaction to a given situation.[40] Despite some criticism concerning the pace of qualitative changes in the military milieu, they seem inevitable. They are reinforced by the acquisition of modern technology by the Polish Armed Forces. Qualitative "breakthroughs" in the whole military system are

caused by this technology or primarily by the recent experience gained from the ongoing wars (especially the Russian-Ukrainian war). It also seems that those changes are powerful enough to overcome the resistance of the present system, whose functioning is still too well-entrenched in the model prevalent in organisations characterised by a weak culture.

Endnotes

[1] https://polskieradio24.pl/130/8806/artykul/2963676, gen-bieniek-ukraina-ma-atuty-ktorych-brakuje-rosyjskiej -armii.
[2] Idem.
[3] Idem.
[4] Sun Tzu, Sztuka Wojny, [Warszawa, 2013]: 57.
[5] R. Aron, Pokój i wojna między narodami, [Warszawa: Wyd. Centrum im. Adama Smitha, 1995]: 197.
[6] Encyklopedia wojskowa, op. cit.
[7] S. Huntington, The Clash of Civilizations and the Remaking of the World Order, Simon & Schuster, 2011:
183-186.
[8] Z. Polcikiewicz, „Properties of future wars and their social implications," Scientific Journals of the Military University of Land Forces, no. 1, [January – February 2012]: 97.
[9] A. Gruszczak, Hybrydowość współczesnych wojen – analiza krytyczna, [in:] W. Sokała, B. Zapała [ed.], Asymetria i hybrydowość – stare armie wobec nowych konfliktów, [Warszawa, 2011]: 11.
[10] W.J. Nemeth, Future war and Chechnya: A case for hybrid warfare, [Monterey: CA, 2002], http://calhoun.nsp.edu/bitstream/handle/10945/5865/02Jun_Nemeth.pdf?sequence=1.
[11] R.G. Walker, Spec FI: The United States Marine Corps and Special Operations, [Monterrey, 1998]: 4.
[12] J.J. McCuen, „Hybrid Wars," Military Review, nr 2, [2008]: 108.
[13] A. Gruszczak, „Hybrydowość współczesnych wojen – analiza krytyczna," [in:] Asymetria i hybrydowość – stare armie wobec nowych konfliktów, pod red. W. Sokała, B. Zapała, [Warszawa: Biuro Bezpieczeństwa Narodowego, 2011]: 11.
[14] A. Ciupiński, K. Malak, Bezpieczeństwo polityczne i wojskowe, [Warszawa: AON, 2004]: 53.
[15] H. Münkler, The wars of the 21st century, IRRC, March 2003, Vol 85: 9.
[16] L. Seaquist, Community War, [Naval Institute Proceedings, August 2000]: 56.
[17] W. Fryc, Wojna – współczesne oblicze, [Toruń: Wydawnictwo MADO, 2009]: 86.
[18] https://polskieradio24.pl/130/8806/artykul/2963676,gen-bieniek-ukraina-ma-atuty-ktorych-brakuje-rosyjskiej-armii.
[19] The origin of the word is featured in online English etymology dictionaries from various sources, e.g.: https://www.etymonline.com/word/leader or https://www.macmillandictionaryblog.com/leader.
[20] M. Kets de Vries, Mistyka przywództwa. Wiodące zachowania w przedsiębiorczości, [Warszawa: Wyd. Studio Emka, 2008]: 24.
[21] A. Cybal-Michalska, „Przywództwo – ustalenia definicyjne i sposoby rozumienia" [Leadership – Attempts of Definition and Ways of Perception], Studia Edukacyjne, nr 37, [Poznań: Adam Mickiewicz University Press, 2015]: 23.
[22] M.K. Sharma, S. Jain, „Leadership Management: Principles, Models and Theories," Global Journal of Management and Business Studies, no. 3, [2013]: 311.
[23] M.J. Michalak, Przywództwo w zarządzaniu szkołą, Raport Ośrodka Rozwoju Edukacji, 5-6, http://ko.poznan.pl/pub/ftp/kazdy.../przywodztwo_w_zarzadzaniu_szkola.pdf.
[24] P. Smółka, Generator charyzmy. Kreowanie osobowości menedżera, [Gliwice: Wydawnictwo HELION, 2007]: 5.
[25] Ch. Bezzina, J. Madalińska-Michalak, „Przywództwo służebne: spojrzenie w przyszłość," [in:] S.M. Kwiatkowski, J. Madalińska-Michalak [red. nauk.], Przywództwo edukacyjne. Współczesne wyzwania, [Warszawa: Wyd. Wolters Kluwer S.A., 2014]: 65.
[26] P. Smółka, Kompetencje społeczne. Metody pomiaru i doskonalenia umiejętności interpersonal-

nych, [Kraków: Wolters Kluwer S.A., 2008]: 12.
[27] P. Smółka, Generator charyzmy. Kreowanie osobowości menedżera, [Gliwice: Wydawnictwo HELION, 2007]: 45-50.
[28] T. Oleksyn, Zarządzanie kompetencjami. Teoria i praktyka, Wyd. II, [Kraków: Oficyna Wolters Kluwer Business, 2010]: 244-250.
[29] T. Oleksyn, Zarządzanie kompetencjami. Teoria i praktyka, Wyd. II, [Kraków: Oficyna Wolters Kluwer Business, 2010]: 24.
[30] Quote by Field Marshal Sir Bill Slim, 1949, Source: https://thearmyleader.co.uk/leadership-quotes/.
[31] A. Jago, „Leadership: Perspectives in Theory and Research," Management Science, Vol. 28, No. 3, [1982]: 315.
[32] G.A. Bohoris, E.P. Vorria, Leadership vs Management, 1.
[33] S.R. Covey, 7 nawyków skutecznego działania, [Warszawa: Wyd. Rebus, 2000]: 11.
[34] K. Golonka, „Kultura organizacyjna – wartości I normy organizacyjne a postawy pracowników," [in:] D. Doliński, J. Maciaszka i R. Polczyk, Wokół wpływu społecznego, [Kraków: Wydawnictwo UJ, 2012]: 147-150.
[35] J. Ślusarski, Pilot-instruktor jako nauczyciel przygotowujący kandydatów do zawodów trudnych i niebezpiecznych, [Dęblin: WSOSP, 2016]: 398-410.
[36] K. Golonka, „Kultura organizacyjna – wartości i normy organizacyjne a postawy pracowników," [in:] D. Doliński, J. Maciaszka i R. Polczyk, Wokół wpływu społecznego, [Kraków: Wydawnictwo UJ, 2012]: 142-143.
[37] Idem.
[38] K. Golonka, „Kultura organizacyjna – wartości I normy organizacyjne a postawy pracowników," [in:] D. Doliński, J. Maciaszka i R. Polczyk, Wokół wpływu społecznego, [Kraków: Wydawnictwo UJ, 2012]: 137-151.
[39] J. Ślusarski, Pilot-instruktor jako nauczyciel przygotowujący kandydatów do zawodów trudnych i niebezpiecznych, [Dęblin: WSOSP, 2016]: 398-410.
[40] C.E. Rash, G.E. Adam, P.A. LeDuc & G. Francis, Pilot Attitudes on Glass and Traditional Cockpits in the U.S. Army's AH-64 Apache Helicopter, Presented at the American Helicopter Society 59th, Annual Forum, Phoenix, AZ. American Helicopter Society International, Inc., May 6-8, 2003.


© shutterstock.com/Oleksii Synelnykov

15

ON THE COGNITIVE SCIENCE OF COMMUNAL TABOO-BREAKING BEHAVIOUR; IMPLICATIONS FOR LEADERSHIP TRAINING IN THE MILITARY

DAVID WILLIAM MAC GILLAVRY, ZDENĚK MIKULKA , JAKUB STŘÍBRNÝ

▶ **Authors:** David William Mac Gillavry, Ph.D. is an assistant professor at the Department of Leadership (Faculty of Military Leadership, Czech University of Defence). His research focuses on the evolutionary, cognitive and physiological foundations of human behaviour under extreme conditions.

Zdeněk Mikulka, Ph.D. is an assistant professor for the Department of Leadership at the Czech University of Defence. He specialises in applied (military and security) ethics. Within the framework of military and security ethics, his research focuses primarily on processes of moral judgments and moral decision-making and the issue of *bellum iustum*.

First Lieutenant Ing. Jakub Stříbrný is a former member of a Czech airborne battalion and a Ph.D. candidate at the Czech University of Defence. His research is mainly concerned with stress management under extreme conditions and combat leadership.

The views contained in this article are the author's alone and do not represent the views of the Czech University of Defence

▶ **Abstract:** Although most modern militaries go to great lengths to prevent their soldiers from losing their moral bearing, unlawful and unethical behaviour, and atrocities are widespread in war. Interestingly, such acts are commonly committed by groups rather than single individuals. The following paper explores the cognitive mechanisms at the heart of communal cruelty. It suggests that communal transgression of moral and social norms ultimately constitutes an integral part of human social cognition, facilitating in-group cohesion and loyalty. However, although we aim to understand how and why people commit acts of communal cruelty, we do not condone it or relieve the perpetrator(s) of responsibility for their actions. Instead, through an attempt to understand the cognitive mechanisms which may, under certain conditions, lead up to extraordinary communal cruelty, this paper aims to contribute to the development of tools to reduce the risk of such acts occurring.

- **Problem statement:** How to explain severe communal transgressive behaviour and how to train officers and NCOs to prevent such acts by those under their command.

- **Bottom-line-up-front:** Communal taboo-breaking behaviour is deeply rooted in human social cognition and accentuated under stressful conditions. However, given the right tools, leadership can mitigate or neutralise this tendency.

- **So what?** If we wish to limit the frequency and severity of severe communal transgressive behaviour, we should first understand it.

Ordinary People and Extraordinary Evil

On the 01st of April, 2022, the first images of the massacre of civilians in the Ukrainian town of Bucha reached popular news outlets.[1] In little over a month of occupation, Russian troops of the 64th Motorised Rifle Brigade had killed at least 419 civilians, many bound before execution and mutilated.[2] In addition, the Ukrainian Territorial Defence Forces, who liberated the town, found a torture chamber and Russian soldiers are reported to have raped girls as young as 14 years old.[3] In 21st-century Europe, such atrocities were, until recently, seen as something from the past, and yet, Bucha was by no means an isolated incident. Similar reports have emerged following the liberation of Izium, Makariv, and Lyman; it is now safe to assume that more towns and cities in Russian-held territory have suffered a similar fate. The Russian authorities, for their part, deny any such event has occurred.

Our inability to understand how anyone, no matter the circumstances, could inflict such horrendous acts of violence upon others often leads to attempts at conceptualising perpetrators of such acts as intrinsically different from ourselves by either singling them out as mentally compromised[4] or designating them to an out-group that possesses an exceptional predisposition for brutality.[5] Either way, they are not like us! They are motivated by evil to do evil; they take delight in the suffering they inflict upon others. The reality, of course, is far more nuanced, and most acts of extreme communal[6] cruelty are rooted in the social context and/or ideological-political system in which they occur.[7] In fact, as the German-born philosopher Hannah Arendt observes, most acts of extraordinary evil are committed by ordinary people, for ordinary reasons, and with ordinary means and are, therefore, „banal".[8]

However, as this view suggests, if extraordinary communal cruelty is rooted in the ordinary, we are left with two inescapable premises: 1. The ability to inflict harm on others is innate to the human condition; and 2. this ability is only expressed under certain conditions. Unsurprisingly, most research in the field is centred around the conditions that enable extraordinary cruelty and is mainly concerned with what we will refer to as ‚institutionally endorsed' (i.e., the local power structure actively sanctions, supports, or enables perpetrators in their actions) atrocities. Institutional endorsement amplifies the human capacity to inflict tremendous suffering on others in two distinct ways. Firstly, it facilitates higher levels of organisation and planning, which can prolong an ordeal and lead to the recruitment of larger groups of potential perpetrators. Secondly, it gives perpetrators the conceptual space to mentally dissociate from their actions. Each participant, from the autocrat who plans the logistics, to the propagandist who formulates the justifica-

tion, to the executioner who pulls the trigger, becomes a cog in an institutional system and can thus downplay their personal responsibility.[10] As such, one can play a central role in a genocide that kills millions without ever coming face to face with one's victims.

Although less well studied, ‚spontaneous eruptions' of extreme communal cruelty do occur (see, for instance, the Maywand killings, Afghanistan 2010[10] and the killing of civilians and prisoners of war by Australian Special Forces, Afghanistan 2005-2016[11]), but lack the necessary bureaucracy to conduct large-scale and/or prolonged atrocities. However, because spontaneous eruptions require all members of the group, and especially the ringleaders, to actively engage, they demonstrate far more clearly that, in many cases, extraordinary communal cruelty is, at its core, a means to stimulate social bonding among perpetrators (see also the literature on gang-rape[12]). As such, we postulate that this focus on the conditions which facilitate communal cruelty falls short just shy of the acknowledgement that extraordinary communal cruelty constitutes a universal tendency in human social cognition and, thus, very likely, amounts to a dysfunctional expression of an otherwise adaptive trait.

The Perpetrators and their Crimes

Despite a general willingness, and often enthusiasm, to actively engage, the available, albeit limited, evidence suggests that most perpetrators of communal acts of cruelty know on some level, both during the act and post-factum, that their actions are morally unacceptable. Adolf Eichman, for instance, admitted during his trial in Jerusalem in 1961 that, even though he visited the extermination camps at Auschwitz, Treblinka, and Chelmno, as well as Minsk and Lviv during raids by the Einsatzgruppen, the sight of murder made him feel sick, and he avoided it as much as possible.[13] Likewise, Wilhelm Trapp, a major in the German Reserve Police Battalion 101 (Reserve-Polizei-Bataillon 101), informed his men with tears in his eyes on the morning of the 13th of July 1942, that they were ordered to round up the Jewish population of the Polish town of Jozewof. Males of working age were to be separated and sent to labour camps, and the women, children, and the elderly were to be shot.[14] Trapp proceeded to make the extraordinary offer to the older men in the battalion that those who did not feel up to the task could refrain from participation. Only 10 to 12 of the approximately 400 members came forward. In addition, one officer had asked to be excused from participation the night before. These men were assigned to different, yet still enabling, duties, while the rest carried out the murders as ordered. Some requested to be replaced after the first shootings, and many participants recounted afterwards how disgusted they were with themselves during and after their first mass killing.[15] Similar sentiments have been reported by many of the men of Charlie

Company (First Battalion, 20th Infantry Regiment, 11th Infantry Brigade, 23rd Infantry Division) after the My Lai Massacre, in which they killed between 347 and 504 unarmed civilians.[16] For instance, Private First Class Paul Meadlo was ordered several times to kill groups of hurdled-together villagers. Reluctantly, and with great emotional strain, he executed the order and reportedly broke down in tears several times during the 4-hour-long massacre.[17]

This willingness to engage in communal acts of cruelty, despite the awareness that it is morally unacceptable, raises the question; why? Why, if the vast majority of perpetrators know that what they are doing is wrong, do they engage anyways? And why, moreover, if this sentiment is so widespread, does dissent not lead to decisive action? At My Lai, there were a handful of soldiers who refused to participate. Still, none in Charlie Company actively resisted, safe for corporal Ronald Grzesik, who intervened when a group of soldiers attempted to rape a young girl.[18] However, he failed to secure her safety for long, and once he had turned his back, the girl was shot together with her mother, sister, and several children.[19] In fact, the most decisive action that day was taken by the crew of an observation helicopter commanded by Warrant Officer Hugh Thompson jr. While flying overhead, they realised that something was wrong and managed to arrange the evacuation of some of the remaining villagers.[20]

Certainly, some individuals, especially those who display dark triad (psychopathy, narcissism, and Machiavellianism) traits, tend to lack basic levels of empathy.[21] Moreover, these traits, especially psychopathy, have been associated with higher levels of (sexual) sadism.[22] However, these individuals make up just 1-4.5 per cent of the general population.[23] They can hardly account for the actions of the majority of individuals who commit communal acts of cruelty. Even if we assume that the military disproportionately attracts or recruits individuals who portray a tendency towards the dark triad (to our knowledge there is one study suggests that the prevalence of anti-social personality disorders, which includes the dark triad, might be twice as high in the military compared to the general population)[24], it is statistically improbable that a military unit constitutes, by accident, 80 per cent or more individuals with a serious tendency for sadism and a severe lack of empathy. Let alone that such a unit would make it through basic training without anyone noticing. However, these individuals may be disproportionately involved in instigating transgressive behaviour; especially psychopathy has been associated with higher tendencies to engage in wartime atrocities.[25] Still, the higher presence of individuals with anti-social personality disorders in the military does not explain the engagement in communal cruelty of neurotypical soldiers.

Moreover, in some cases, people high on dark triad traits are considered detrimental to efficiency and too unreliable by organisations, which either engage in or enable communal acts of cruelty. The SS Einsatzgruppen, for instance, would commonly prefer neurotypical, psychologically healthy individuals and actively selected against individuals with a tendency towards sadism or psychopathy.[26] As such, although individuals with anti-social personality traits may facilitate communal acts of cruelty, they are too few to account for the high levels of engagement commonly observed among perpetrators.

Interestingly, there is some evidence that suggests that head injury may precipitate diminished empathy.[27] Although exact statistics are hard to come by, it is safe to assume that front-line military personnel runs a greater risk of head trauma. It is, however, unclear how such trauma interacts with stress and psychological trauma and whether its effects are permanent or transient. Moreover, decreased empathy does not necessarily entail increased cruelty and, as such, seems a prerequisite for cruel behaviour rather than an indicator. Similarly, there are some indications that psychological trauma may negatively affect empathy.[28] However, the available evidence relates largely to post-traumatic stress disorder, a mental disorder which is commonly diagnosed at least six months after the traumatic experience.[29] As such, it is unclear how psychological trauma affects empathy in the short term. Moreover, in many cases, communal cruelty precedes the trauma rather than causing it.[30]

One explanation, which is often cited by perpetrators post-factum, is a fear of repercussions, and there certainly seems to be an element of in-group control on commitment. Such repercussions may range from being killed oneself[31] to future negative consequences[32] or social ostracisation.[33] As far as we know, there is limited evidence, apart from the Rwandan genocide,[34] that explicit threats against abstainers' lives are common. However, especially in a military context, the availability of lethal weapons and the general danger involved in operations may contribute to such fears, even if the threat is not made explicit. Moreover, non-compliers often find themselves on more dangerous missions in the wake of communal cruelty.[35] As such, the threat is often there, even if it is not explicitly voiced.

More common are explicit threats of future consequences. Most mass atrocities, and thus by extension, the more severe acts of communal cruelty, occur in a military or para-military context.[36] As such, the context and structure to both reward and punish [non-]compliance are readily in place. At My Lai, for instance, Lieutenant Calley threatened several soldiers with court-martial, when they disobeyed orders to shoot unarmed civilians.[37] On the other hand, throughout the Vietnam war, the ‚body count' indicated

a soldier's chances of promotion,[38] which may have influenced some at My Lai to see an easy way to self-advancement. As such, opportunities to advance or degrade one's professional position are closely tied to one's willingness to engage in institutionally endorsed transgressions.

In addition, institutional endorsement often provides the logistics, means and formal justification (i.e., ideology) to carry out prolonged large-scale atrocities. As such, one does not necessarily need to be a firm believer in the ideology on which the transgression is based. Pragmatic acceptance of its basic premises often suffices. Only 25 per cent of the men serving in Reserve Police Battalion 101, for instance, were members of the Nazi party.[39] Moreover, they were recruited into the Reserve Police because they were considered too old for the regular army (the average age was 39) and thus had their formative years in pre-nazi Germany, came from a social class which traditionally leaned more communist or socialist. Most came from Hamburg, one of the least Nazified cities in Germany.[40] Although hard data about their ideological beliefs are unfortunately unavailable, it is not likely that these individuals were hard-core believers in Nazi ideology. Yet, they managed to be directly or indirectly involved in the murder of 83.000 Jews, making them part of the most deadly police battalions of the Holocaust.[41]

Finally, institutional endorsement offers participants the conceptual space to dissociate from the harm they cause by diffusing responsibility over the system or situation.[42] Firstly, any prolonged, large-scale, coordinated action requires a certain level of planning and bureaucracy. As such, behind the actual killers stands a cadre of individuals who enable and coordinate their actions. As mentioned above, Eichman probably never killed anyone personally, and yet, aside from Hitler, he probably bears more responsibility for the Holocaust than anyone else. Eichman is not unique in this regard. For many men involved in planning, justifying, and facilitating the Holocaust, it was a bureaucratic or ideological exercise rather than the systematic murder of millions of people. They were, in a sense, divorced from the suffering they were causing even though their guilt, it can be argued, far exceeds that of the camp guards, members of the SS and the auxiliary forces who carried out the murders.

However, the space to diffuse responsibility over the larger community of perpetrators or the organisation which endorses the transgression extends to the killers as well. During the Rwandan Genocide in 1994, Hutu perpetrators attacked their Tutsi compatriots with machetes and rifles. In many cases, the perpetrators and victims lived in the same villages and knew each other well. They came from the same communities and went to church together. Yet, despite this close social and physical proximity, the Hutu

genocidaires killed approximately half a million Tutsi within the first 100 days, making it one of the most efficient and brutal genocides in recorded history.[43]

Institutional endorsement, and thus formal space to diffuse responsibility, is not always explicit and often retracted retrospectively. Many of the American GIs involved in the massacre at My Lai believed they were expected to kill indiscriminately and reference this as one of the main reasons for their brutality.[44] Subsequent investigations by the United States Army led to the conviction of Lieutenant William Calley, even though he was neither the highest-ranking officer on the ground nor the only soldier engaging in the killing. In truth, few refused to participate, and none in Charlie Company seriously attempted to stop it. Although it is unclear what led the men to carry out the massacre, the presence of command helicopters overhead suggests that the destruction of My Lai, including its civilian population, might have been part of the contemporary US counterinsurgency strategy.[45] Similarly, there are indications that the torture sessions inflicted on prisoners by US soldiers at the Abu Ghraib prison in Iraq in 2004 were, if not instigated, at least supported and tolerated by higher command as a means to aid intelligence gathering.[46]

In response to these and other atrocities, social psychologists have sought to shed light on the underlying psychological mechanisms and have identified authority[47], social conformity[48], and fear of in-group retribution[49] as potential pressure points once the transgression has commenced. However, non of these mechanisms explain why groups gravitate towards transgression in the first place. The Stanford Prison Experiment has yielded a host of information and theories about the acceleration of transgression but remarkably little on its instigation.[50] To date, this has been the only somewhat controlled experiment into the dynamics of communal transgressions against widely accepted ethical norms. In it, participants (all male students at Berkley University with no indications of mental disorder) were randomly assigned to either be prison guards or prisoners. The experiment was supposed to take two weeks but had to be terminated after only five days because of the severe mistreatment of prisoners by the prison guards. Although based on newly uncovered materials, it has recently been argued that the experimenters probably played a more significant role in instigating the abuse than previously thought.[51] However, participants in the experiment knew that they were under no obligation to carry out any directive from the experimenters and could, at any moment, terminate their participation.

Moreover, they had been screened for markers of mental disorders, and there was no indication of a higher affinity to sadism in any of them.[52] So, even if they were urged to mistreat the „prisoners", they could have objected but chose not to. Encouraged or not, they took the first and following steps towards inhumane behaviour.

Moreover, in the absence of explicit institutional endorsement, acts of extreme communal cruelty, albeit on a smaller scale, unfortunately, occur with shocking regularity. Although one could point to in-group dominance structures as a substitute for institutional endorsement, it must be noted that this would require the individuals who make up these structures to instigate, accelerate and actively participate in the brutality.

During the Maywand killings, a group of 12 US servicemen deployed in the Maywand district in Afghanistan styled themselves the „Afghan Kill Team".[53] This group engaged passively (seven were involved in the cover-up but not the killing itself) or actively in the thrill-killing and subsequent mutilation of at least three Afghan civilians.[54] In at least two of the three known cases, the perpetrators used captured weapons to hide the fact their victims were unarmed non-combatants.[55] Such actions indicate that these men were aware that what they did was wrong and would get into serious trouble if found out. However, at the same time, they took photographs of themselves posing with the bodies and sometimes took body parts as souvenirs.[56]

Incidents like the Maywand killings indicate that although the institutional, hierarchal, and ideological context can undoubtedly play a prominent part in shaping acts of extreme communal brutality, it is unlikely that they constitute the psychological bedrock which underlies the tendency of groups to inflict harm on others. Instead, this tendency can best be understood as a dysfunctional expression of transgression and secrecy dynamics. A greater understanding of these dynamics and the conditions under which they can become dysfunctional may thus aid in mitigating the likelihood and severity of acts of extreme communal brutality.

Secrecy and the Social Value of Transgression

Minor infractions of commonly held norms are incredibly common, as is the willingness to divulge information about those infractions selectively.[57] At first glance, this is paradoxical; surely, if a certain bit of information is worth concealing, its revelation would be detrimental to the transgressor. To account for this paradox, it is traditionally assumed that humans are inherently moral beings and that they, therefore, struggle to conceal information intentionally.[58] Secrecy, thus, coevolved with stigmatisation and enables individuals to, at least temporarily, conceal certain undesirable traits, knowledge of which may constitute a challenge to their position within the social group.[59] Initially, this position was corroborated by studies into deceit, of which secrecy forms a sub-category,[60] which suggests that being truthful leads to less cognitive strain than lying.[61] However, these studies compared truthfulness and deceit under neutral conditions and did not take the roles of social and psy-

chological pressures into account. Accordingly, when this was corrected for in subsequent experiments, the choice depended on an ad hoc cost-benefit calculation (i.e., the cost of being truthful set off against the convenience of lying within the specific context) rather than an innate desire or drive to be truthful.

As such, secrecy, in both content and outlook, is quite distinct from self-concealment. The latter refers to „a predisposition to actively conceal from others personal information that one perceives as distressing or negative"[62] and generally involves the fear of stigmatisation.[63] Hence, self-concealment often occurs in relation to trauma, illness, mental health issues, family matters, personal insecurities, and sometimes severe transgressions of social norms.[64] As such, not only the content but also the existence of that content is consciously concealed. On the other hand, secrecy refers to information which is concealed, while its existence of said information is not, and may even be, actively propagated.[65] As such, secrecy is, first and foremost, a social phenomenon,[66] and both revelation and concealment are aimed at a target audience.[67] The choice to reveal or conceal information can, thus, best be understood as a social strategy[68] and depends largely upon whether or not the secret keeper perceives the potential receiver as both willing and able to use the information to the detriment of the revealer.[69] Secrecy, thus, beyond the potential transmission of information, secrecy (i.e., the act of either revealing or concealing information) constitutes a means of social communication.

Because of this social component, secrets commonly comprise specific information types. The most common and most important to the current discussion are relatively minor infractions of commonly held social and moral norms. Because of the social nature of secrecy revelations, these transgressions can neither be too trivial nor too serious. Few would, for instance, be comfortable receiving information about a murder, let alone keeping that information concealed. Secondly, secrets may contain information that provides the keeper with a social or economic advantage over others. This information may pertain to transgressions by others, perceived innovations, or ongoing political processes (i.e., state and corporate secrets). Importantly, the information that makes up the content of these secrets does not reflect negatively upon the revealer, even if the act of revealing it may.

The communication of secrets follows a relatively strict set of rules, a grammar, in which, if successful, the secret keeper and receiver enter into a „social contract".[70] Firstly, by revealing the information, the secret keeper relinquishes control and, thus, power over the information in favour of the receiver.[71] Even though the receiver is expected to retain secrecy,[72] what they do with it, is ultimately up to them. The act of revealing this information thus signals trust and a desire to deepen relations, and further dissemination of the

information by the receiver usually constitutes a breach of that trust. It is therefore not surprising that even if the receiver of secret knowledge is not made explicitly aware of the secret nature of the information revealed to them, most instinctively understand, though not necessarily respect, the secret nature of the information.[73]

On the other hand, the receiver signals a similar desire and understanding by receiving the information and retaining secrecy. Moreover, because many secrets involve personal transgressions of commonly held social norms, the receiver is expected to refrain from judging the secret keeper based on the revealed information.[74] A refusal to receive secret information thus communicates as much of an unwillingness to interact with the secret keeper, as the unwillingness to reveal.

As a consequence, human social groups are infused with lots of interpersonal connections in which everyone has some information on some others, but no one knows everything about everyone. As such, secrecy allows individuals to demonstrate their loyalty to and investment in the group without facing the judgment of said group. Furthermore, people who conceal or reveal too much and people who never transgress against the norms, are often mistrusted or disliked their lack of secret-sharing limits the strength of the connections they can make.[75] In addition, because secrecy serves as a means to signal in-group investment and loyalty, the willingness to reveal and the risks one is willing to take to over-share increases as the need for in-group affiliation rises. Consequently, high-stress environments should be expected to invite the revelation of more severe social norms transgressions. Moreover, these revelations are aimed predominantly at individuals whom the keeper perceives as similar or superior on the social hierarchy.

Communal transgressions of social norms differ substantially from individual infractions in that the group as a unit engages in the norm-violating behaviour. Consequently, if one of the group opts to divulge the information to a third party, they do so to the detriment of themselves and all in-group members. As such, communal transgressions require extra controls on dissemination, which is in part achieved through mutual engagement. Mutual engagement signals loyalty to the group by taking on an equal share of the responsibility and, thus, an equal investment in sustained concealment. However, it is often impossible to precisely quantify the transgression, let alone replicate it, and so, the severity of transgression can quickly accelerate as in-group members vie to demonstrate in-group involvement and loyalty. The men of the Reserve Police Batallion 101, for instance, felt such an obligation towards their comrades to participate that those who could not bring themselves to kill would decades later still ascribe this inability to weakness rather than moral considerations for the wellbeing of their victims.[76]

Of course, shared responsibility for communal transgressions, based on mutual engagement, which are carried out within a strict hierarchal structure, like the military, is mitigated by the different positions transgressors occupy in said hierarchy. An officer who orders a unit to carry out an atrocity, it could be argued, bears more responsibility for it than the soldier who carries out said order. At My Lai, for instance, Lieutenant Calley threatened to have some of the soldiers in his platoon who refused to partake in the murders court-martialled,[77] and Captain Medina encouraged his men in the aftermath of the massacre to refrain from commenting on it.[78] In addition, he approached at least one soldier, Michael Berhardt, personally to warn him not to write to his congressman about the massacre.[79] Bernhardt was one of the soldiers who refused to participate and thus had little incentive to keep the massacre secret. Although he claimed not to have discussed any plans to attract attention to the massacre with anyone, his refusal to participate and a history of contacting authorities was enough for Medina to make his thinly veiled threat.[80] Had Bernhardt actively participated, his involvement may have been perceived as sufficient to deter him from contacting outside authorities. As such, despite differences in responsibility due to hierarchal positions, at a certain point, the level of engagement exceeds the norms to such an extent that any differences become —at least on an emotional level— almost academic.

The extent to which individuals are willing to engage in communal transgressions is thus tied to their psychological need for in-group safety, which in turn depends on their perception of both the group and the wider context. Under uncertain or highly stressful conditions, the incentive to engage thus increases. Where individual transgressions are not meant to shock, communal transgressions depend, in as far as they signal loyalty to the group, on a willingness to transgress past commonly accepted limits. Moreover, because the direct peer group collectively engages in transgressive behaviour, there are few social cues that one is involved in unacceptable conduct. From the perpetrator's perspective, their concerns about their actions and those of other in-group members do not seem shared to the same extent by the group. This further lowers the threshold to engage, even if one knows it is incorrect.[81] As such, military personnel is uniquely set up for the perfect storm; they are confronted with highly stressful and dangerous situations, depend heavily on each other (the in-group) for survival, and are equipped with the means to cause serious harm.

Only those cases in which things go terribly wrong are reported, which provides us with a wealth of information on the ugliest side of human nature. Yet, we lack sufficient direct evidence on prevention

The Unknown Hero: Those Who Resist Human Nature

Unfortunately, remarkably little is known about instances in which individuals prevented an atrocity from occurring. Not because this rarely happens, but rather because if an issue has been prevented from reaching its logical conclusion, then nothing has happened and thus, there is no incident to report. Therefore, we are confronted with a reverse survivor bias. Only those cases in which things go terribly wrong are reported, which provides us with a wealth of information on the ugliest side of human nature. Yet, we lack sufficient direct evidence on prevention. However, given the number of wars fought worldwide, we should expect far more mass atrocities. That they do not, or that we do not learn of them, may be partially down to successful cover-ups or a lack of interest (the best-kept secrets are, after all, „those that no one really wants to know")[82]. However, in a world in which everyone has a camera on their phone and ready internet access, it has become increasingly difficult to cover up extreme, large-scale communal transgressions. The mistreatment of prisoners at Abu Ghraib, the Maywand killings, and, more recently, the war crimes of Russian soldiers in Ukraine have all been partially documented photographically by perpetrators, who shared this material with others.[83] As such, all else being equal, we should expect a stark increase

in reported cases. This disproportionately affects the militaries of more affluent (i.e., with easier access to modern communication technology) nations. To our knowledge, this is not the case.

Sometimes resistance comes in the form of an out-group member or an in-group member who is divorced from the act for one reason or another and intercedes. In the My Lai massacre, for instance, a US helicopter commander, Warrant Officer Hugh Thompson Jr., intervened. Upon realising what was happening, Thompson confronted the officers and later the enlisted men of Charlie Company while he began arranging the evacuation of civilians.[84] His bravery, and that of the two men under his command, saved the remaining villagers and brought the massacre to the world's attention. Likewise, although on a much less dramatic scale, when psychologist Christina Maslach was brought in to evaluate the Stanford Prison Experiment, she was appalled by what was happening and convinced the principal researcher, Philip Zimbardo, to put an end to the experiment.[85] However, given that such instances require the presence of an out-group or semi-out-group member willing and able to intercede on behalf of the victims, they are probably relatively rare.

As such, the most likely source of resistance derives from within the in-group. Interestingly, although Solomon Asch's classic studies into conformity are often referenced as evidence for the tremendous effect in-group dynamics have on human perception,[86] one variation of his experiment demonstrated how one dissenting voice can largely offset the effect.[87] However, in Asch's experiments, stress levels and the need for in-group security were relatively low. In more challenging conditions, a dissenting voice seems to have less of an impact if it is only concerned with a refusal to engage. One of the prison guards in the Stanford Prison Experiment refused to engage in the abuse but was not followed by his fellow guards. Likewise, there were those within Charlie Company in My Lai and Reserve Police Batallion 101 in Poland who refused to participate without their objections having had much of an effect on other members of their respective units.[88] As such, resistance under these conditions likely requires a more proactive stance. After all, one needs to offset both the effects of in-group conformity and the need for safety within the group.

Although there is, to our knowledge, no direct evidence to support the notion that proactive resistance against communal brutality can be „contagious" (i.e., can lead others to object as well), there is reasonable circumstantial evidence to suggest this is indeed the case. Firstly, a follow-up to the classic Asch paradigm found that most participants did not conform because they believed the position of the group to be more correct than their own.[89] Similar sentiments are found in the accounts of perpetrators of communal brutality; many engage while knowing on some level that what they are doing is unacceptable.

Although some believe that, what they are involved in, is morally correct, this is a minority, and any communal action ends or never commences when a critical mass within the group proactively opposes the group's activities. As such, any strategy to diminish the likelihood of extreme transgressions has to be aimed at those in the group who know that the infraction is highly immoral but do not act upon it.

Although relatively little is known about predictors of „reluctant conformers",[90] neurological studies into conformity suggest a rise in activity in the amygdala upon confrontation with a factually „wrong" answer by the current in-group.[91] This brain region is strongly associated with stress-response and prediction error.[92] Therefore, it is unsurprising to see activity in this region rise among those who feel uncertain in response to conflicting perceptions with the group. Moreover, individuals with a higher affinity for psychopathy, i.e., less susceptible to in-group dynamics, do not display equal elevations of activity.[93] In contrast to this, those who conform and fully embrace the position of the in-group, beyond displaying elevated amygdala reactivity, demonstrate raised activity in the hippocampus [a region primarily associated with memory][94] and the visual cortex, which indicates a retrospective reevaluation of memory and perception.[95] In a real sense, they grew to believe the false information to be true. As such, at least for reluctant conformers, resistance to in-group pressure and amygdala reactivity should be correlated[96] and resilience training for military professionals should, hence, incorporate protocols that lower the effects of in-group pressure on amygdala reactivity and the stress response in general.

Exactly how this can be accomplished, given the high-stress context in which military professionals operate, remains, at least to our knowledge, unclear and more research is warranted. There are some interesting avenues of study, including the effects of leadership on endorphin function in subordinates[97] and the effects of a „designated confidant" [i.e., an individual who is explicitly tasked with taking the moral position in a unit's actions to ensure the conceptual space for resistance.[98] In addition, providing officers lower down the ranks and non-commissioned officers with higher levels of autonomy may limit the conceptual space for the diffusion of responsibility. However, at present, all these approaches are based mainly on speculation. As such, this paper should be read as an attempt to explore the next step in investigating atrocity prevention rather than providing concrete recommendations.

Conclusion

Most research into extreme communal cruelty revolves around the conditions which make it possible. Given the scale and frequency of genocide in the previous century, it is unsurprising that, in particular, institutionally endorsed atrocities have been awarded a lot of atten-

tion. In this paper, we explored the cognitive basis for extreme communal cruelty instead and have identified a possible mechanism through which otherwise moral individuals can find themselves engaging in unspeakable acts of violence. Rather than a symptom of mental dysfunction or indoctrination, we argue that communal transgressions of commonly held social norms are rooted in human social cognition and in-group cohesion. However, where individual infractions of the norms are naturally limited in their expression (if they are to serve a social function), communal transgressions are far less constrained. As such, especially in high-stress contexts, such as those faced by military professionals, the need for in-group security, and thus the willingness to engage in communal transgressions and accelerate their severity, rises substantially. Extreme communal cruelty can, therefore, be understood as a dysfunctional expression of human social cognition under extreme conditions. Any attempt at curtailing such events should, therefore, be aimed primarily at the mechanisms behind in-group membership and the stress which comes with potential exclusion. Such targeted curtailment becomes especially pertinent when one considers that often, acts of conformity do not equate to a personal agreement with the group, just a willingness to go along with the group's judgement in favour of one's own.

Finally, we would like to caution the reader that this paper and its thesis are in no way a defence of the indefensible. On the contrary, because most involved know that the transgression is unacceptable, it likely takes a few in-group members to actively oppose it to keep in-group signalling dynamics from running out of control. The tendency to yield to perceived in-group pressure can be significantly mitigated by as little as one dissenting voice.[99] In a genuine sense, in the face of the worst that humankind has to offer, each individual becomes responsible for both their own acts and those of all others in their in-group. The massacre at Bucha, and all those preceding and following it were not inevitable. Attempting to understand the mechanisms behind communal cruelty does not justify or condone such behaviour or relieve perpetrators of their responsibility.[100] However, it may help in avoiding, mitigating the severity of, and predicting future occurrences.

Although instances in which groups are effectively kept from engaging in extreme violence rarely reach front-page news, the fact that the introduction of modern communication technologies did not notably raise the instances of reported misconduct in modern, western-trained militaries suggests that proper training and leadership as well as care for deployed soldiers, may strongly mitigate the probability of extreme communal transgressions occurring.

Endnotes

[1] CNN, "Bodies Seen on Street in Bucha, Where Ukrainians Have Retaken Territory from Retreating Russians," CNN, 2022, https://www.cnn.com/europe/live-news/ukraine-russia-putin-news-04-1-22#h_8979c87beb701caa4bfc6287cb620f5b; Spiegel International, "The Horrors of Bucha At the Scene of the War Crimes," Spiegel International, 2022, https://www.spiegel.de/international/world/the-horrors-of-bucha-at-the-scene-of-the-war-crimes-a-b1b95592-5518-45ae-8010-2fd060c3dcd9; The Guardian, "Killing of Civilians in Bucha and Kyiv Condemned as 'Terrible War Crime,'" The Guardian, 2022, https://www.theguardian.com/world/2022/apr/03/eu-leaders-condemn-killing-of-unarmed-civilians-in-bucha-and-kyiv.
[2] Louisa Loveluck et al., "In Bucha, the Story of One Man's Body Left on a Russian Killing Field," The Washington Post, April 16, 2022, https://www.washingtonpost.com/world/interactive/2022/bucha-atrocities-civilian-killings/; Max Bearak and Louisa Loveluck, "In Bucha, the Scope of Russian Barbarity Is Coming into Focus," The Washington Post, April 6, 2022, https://www.washingtonpost.com/world/2022/04/06/bucha-barbarism-atrocities-russian-soldiers/.
[3] Yogita Limaye, "Ukraine Conflict: 'Russian Soldiers Raped Me and Killed My Husband,'" BBC News, April 11, 2022, https://www.bbc.com/news/world-europe-61071243.
[4] Former United States Sevcretary of Defence, Donald Rumsfeld, for instance, referred to the guards at the US-run Abu Graib prison, who were involved in the torture and humiliation sessions of prisoners, as "un-American" and "a few bad apples" [see: Kersten, Astrid, and Mohammed Sidky. "Re-Aligning Rationality: Crisis Management and Prisoner Abuses in Iraq." Public Relations Review 31, no. 4 (2005): 471–78. https://doi.org/10.1016/j.pubrev.2005.08.003; Smeulers, Alette, and Sander Van Niekerk. "Abu Ghraib and the War on Terror - A Case against Donald Rumsfeld?" Crime, Law and Social Change 51, no. 3–4 (2009): 327–49. https://doi.org/10.1007/s10611-008-9160-2). Similarly, the My Lai massacre was at the time often ascribed to a few rouge soldiers, and accordingly, only one, Lieutenant Calley, got sentenced for his involvement [see: Gray, Truda, and Brian Martin. "My Lai: The Struggle Over Outrage." Peace & Change 33, no. 1 (2007): 90–113. https://doi.org/10.1111/j.1468-0130.2007.00477.x.].
[5] For an excellent review and critique of perpetrator profiles as well as an intuitive understanding of them, see: James Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing (Oxford: Oxford University Press, 2002), https://doi.org/10.1001/jama.300.6.737.
[6] In this paper, we do not address extremely violent acts perpetrated by individuals. We recognise, of course, the existence of pathologies such as psychopathy, sociopathy and narcissism, which may predispose individuals to violent behaviour. Here, however, we are solely concerned with communal acts of extreme cruelty.
[7] Philip Zimbardo, The Lucifer Effect (New York: The Random House Publishing Group, 2007); Stanley Milgram, "Behavioral Study of Obedience.," The Journal of Abnormal and Social Psychology 67, no. 4 (1963): 371–78, https://doi.org/10.1037/h0040525; James Waller, "Perpetrators of Genocide: An Explanatory Model of Extraordinary Human Evil," Journal of Hate Studies 1, no. 1 (2002): 5, https://doi.org/10.33972/jhs.2; Christopher Browning, Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland (London: Penguin Books, 2001); Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing; Philip Zimbardo et al., "The Stanford Prison Experiment: A Simulation Study of the Psychology of Imprissityonment Conducted August 1971 at Stanford University [On-Line Slide Show]," Zimbardo Inc., 1972, https://web.stanford.edu/dept/spec_coll/uarch/exhibits/spe/Narration.pdf.
[8] Hannah Arendt, Eichmann in Jerusalem: A Report on the Banality of Evil (Penguin Books, 2006).
[9] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing, 213-16; Arendt, Eichmann in Jerusalem: A Report on the Banality of Evil; David LTC (Ret.) Grossman, On Killing: The Psychological Costs of Learning to Kill in War and Society, Back Bay Books (New York, Boston, 1996), 152.
[10] Thomas Gregory, "Dismembering the Dead: Violence, Vulnerability and the Body in War," European Journal of International Relations 22, no. 4 (2016): 944–65, https://doi.org/10.1177/1354066115618244; Henry A. Giroux, "Disturbing Pleasures: Murderous Images and the Aesthetics of Depravity," Third Text 26, no. 3 (2012): 259–73, https://doi.org/10.1080/09528822.2012.679036.
[11] Guilfoyle, Kyriakakis, & O'Brien, 2022
[12] Blanchard, 2010
[13] Arendt, Eichmann in Jerusalem: A Report on the Banality of Evil, 87-8.
[14] Browning, Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland, 2.
[15] Browning. 2.
[16] Truda Gray and Brian Martin, "My Lai: The Struggle Over Outrage," Peace & Change 33, no. 1 (2007): 90–113, https://doi.org/10.1111/j.1468-0130.2007.00477.x.
[17] Howard Jones, My Lai: Vietnam, 1968, and the Descent into Darkness (Oxford: Oxford University Press, 2017), 68–9.
[18] Jones.
[19] Claude Cookman, "An American Atrocity: The My Lai Massacre Concretized in a Victim's Face," Journal of American History 94, no. 1 (2007): 154–62, https://doi.org/10.2307/25094784.

[20] Jones, My Lai: Vietnam, 1968, and the Descent into Darkness.
[21] Phillip S. Kavanagh, Tania D. Signal, and Nik Taylor, "The Dark Triad and Animal Cruelty: Dark Personalities, Dark Attitudes, and Dark Behaviors," Personality and Individual Differences 55, no. 6 (2013): 666–70, https://doi.org/10.1016/j.paid.2013.05.019; Nadja Heym et al., "Empathy at the Heart of Darkness: Empathy Deficits That Bind the Dark Triad and Those That Mediate Indirect Relational Aggression," Frontiers in Psychiatry 10, no. MAR (2019): 1–10, https://doi.org/10.3389/fpsyt.2019.00095; Imani N. Turner, Joshua D. Foster, and Gregory D. Webster, "The Dark Triad's Inverse Relations with Cognitive and Emotional Empathy: High-Powered Tests with Multiple Measures," Personality and Individual Differences 139, no. October 2018 (2019): 1–6, https://doi.org/10.1016/j.paid.2018.10.030.
[22] Natalie Sest and Evita March, "Constructing the Cyber-Troll: Psychopathy, Sadism, and Empathy," Personality and Individual Differences 119 (2017): 69–72, https://doi.org/10.1016/j.paid.2017.06.038; Andreas Mokros et al., "Psychopathy and Sexual Sadism," Law and Human Behavior 35, no. 3 (2011): 188–99, https://doi.org/10.1007/s10979-010-9221-9; Debra O'Connell and David K. Marcus, "A Meta-Analysis of the Association between Psychopathy and Sadism in Forensic Samples," Aggression and Violent Behavior 46, no. February (2019): 109–15, https://doi.org/10.1016/j.avb.2019.02.013.
[23] Ana Sanz-García et al., "Prevalence of Psychopathy in the General Adult Population: A Systematic Review and Meta-Analysis," Frontiers in Psychology 12, no. August (2021), https://doi.org/10.3389/fpsyg.2021.661044; Kavanagh, Signal, and Taylor, "The Dark Triad and Animal Cruelty: Dark Personalities, Dark Attitudes, and Dark Behaviors."
[24] Stephen C. Messer et al., "Projecting Mental Disorder Prevalence from National Surveys to Populations-of-Interest - An Illustration Using ECA Data and the U.S. Army," Social Psychiatry and Psychiatric Epidemiology 39, no. 6 (2004): 419–26, https://doi.org/10.1007/s00127-004-0757-1.
[25] Darren W. Holowka et al., "Associations among Personality, Combat Exposure and Wartime Atrocities," Psychology of Violence 2, no. 3 (2012): 260–72, https://doi.org/10.1037/a0026903; Deirdre MacManus et al., "Impact of Pre-Enlistment Antisocial Behaviour on Behavioural Outcomes among UK Military Personnel," Social Psychiatry and Psychiatric Epidemiology 47, no. 8 (2012): 1353–58, https://doi.org/10.1007/s00127-011-0443-z.
[26] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing, 67.
[27] Rodger L.L. Wood and Claire Williams, "Inability to Empathize Following Traumatic Brain Injury," Journal of the International Neuropsychological Society 14, no. 2 (2008): 289–96, https://doi.org/10.1017/S1355617708080326; Arielle de Sousa et al., "Understanding Deficits in Empathy after Traumatic Brain Injury: The Role of Affective Responsivity," Cortex 47, no. 5 (2011): 526–35, https://doi.org/10.1016/j.cortex.2010.02.004.
[28] Monica Mazza et al., "Neural Activity Related to Cognitive and Emotional Empathy in Post-Traumatic Stress Disorder," Behavioural Brain Research 282 (2015): 37–45, https://doi.org/10.1016/j.bbr.2014.12.049.
[29] American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (5th, American Journal of Psychiatry, 2013, https://doi.org/10.1176/appi.books.9780890425596.744053; World Health Organization, "The ICD-10 Classification of Mental and Behavioural Disorders: Diagnostic Criteria for Research," 1993, https://doi.org/10.1002/1520-6505(2000)9:5<201::AID-EVAN2>3.3.CO;2-P.
[30] Barbara L. Pitts et al., "Killing versus Witnessing Trauma: Implications for the Development of PTSD in Combat Medics," Military Psychology 25, no. 6 (2014): 537–44, https://doi.org/10.1037/mil0000025; Rachel M. MacNair, "Perpetration-Induced Traumatic Stress in Combat Veterans," Peace and Conflict 8, no. 1 (2002): 63–72, https://doi.org/10.1207/S15327949PAC0801_6.
[31] In the high-intense violence fuelled conditions associated with many atrocities committed during wartime, the threat of suffering is ever present and, at times, explicitly expressed. Several participants of the Rwandan genocide, for instance, attest that they were given the choice between killing or being killed. See: Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing.
[32] Some of those who refused to participate in the My Lai massacre were threatened by Leutenant Calley with a court martial for disobeying orders. In addition, warrant officer Thompson got sent on increasingly dangerous missions after he submitted his report about the massacre. See: Jones, My Lai: Vietnam, 1968, and the Descent into Darkness.
[33] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing, 190.
[34] Lars Waldorf, "Ordinariness and Orders: Explaining Popular Participation in the Rwandan Genocide," Genocide Studies and Prevention 2, no. 3 (2007): 267–69, https://doi.org/10.3138/gsp.2.3.267.
[35] See, for instance, non-compliers at My Lai: Jones, My Lai: Vietnam, 1968, and the Descent into Darkness, 343.
[36] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing, 191.
[37] Jones, My Lai: Vietnam, 1968, and the Descent into Darkness, 85.
[38] Jones; Scott Sigmund Gartner and Marissa Edson Myers, "Body Counts and „ Success „ in the Vietnam and Korean Wars," The Journal of Interdisciplinary History 25, no. 3 (1995): 377–95.

[39] Browning, Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland, 48.
[40] Browning, 48.
[41] Browning, 142.
[42] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing, 213.
[43] for an excellent analysis of the Rwandan Genocide, see: Waller, 2008.
[44] Charles M. Rowling, Penelope Sheets, and Timothy M. Jones, "American Atrocity Revisited: National Identity, Cascading Frames, and the My Lai Massacre," Political Communication 32, no. 2 (2015): 310–30, https://doi.org/10.1080/10584609.2014.944323; Gray and Martin, "My Lai: The Struggle Over Outrage."
[45] Many of the soldiers who served in Charley Company certainly believed that the order to destroy everything at My Lai came from a higher authority than their company commander. See: Jones, My Lai: Vietnam, 1968, and the Descent into Darkness, 181.
[46] Zimbardo, The Lucifer Effect, 421.
[47] Milgram, "Behavioral Study of Obedience."; Jerry M. Burger, "Replicating Milgram: Would People Still Obey Today?," American Psychologist 64, no. 1 (2009): 1–11, https://doi.org/10.1037/a0010932; Dariusz Doliński et al., "Would You Deliver an Electric Shock in 2015? Obedience in the Experimental Paradigm Developed by Stanley Milgram in the 50 Years Following the Original Studies," Social Psychological and Personality Science 8, no. 8 (2017): 927–33, https://doi.org/10.1177/1948550617693060.
[48] Solomon E. Asch, "Studies of Independence and Conformity: I. A Minority of One against a Unanimous Majority.," Psychological Monographs: General and Applied 70, no. 9 (1956): 1–70, https://doi.org/10.1037/h0093718; M. T. Liuzza et al., "An FMRI Study on the Neural Correlates of Social Conformity to a Sexual Minority," Scientific Reports 9, no. 1 (2019): 1–11, https://doi.org/10.1038/s41598-019-40447-3; Kazuo Mori and Miho Arai, "No Need to Fake It: Reproduction of the Asch Experiment without Confederates," International Journal of Psychology 45, no. 5 (2010): 390–97, https://doi.org/10.1080/00207591003774485.
[49] Waller, Becoming Evil: How Ordinary People Commit Genocide and Mass Killing.
[50] Zimbardo et al., "The Stanford Prison Experiment: A Simulation Study of the Psychology of Imprisityonment Conducted August 1971 at Stanford University [On-Line Slide Show]"; Thomas Carnahan and Sam McFarland, "Revisiting the Stanford Prison Experiment: Could Participant Self-Selection Have Led to the Cruelty?," Personality and Social Psychology Bulletin 33, no. 5 (2007): 603–14, https://doi.org/10.1177/0146167206292689; Teresa C. Kulig, Travis C. Pratt, and Francis T. Cullen, "Revisiting the Stanford Prison Experiment: A Case Study in Organized Skepticism," Journal of Criminal Justice Education 28, no. 1 (2017): 74–111, https://doi.org/10.1080/10511253.2016.1165855.
[51] Thibault Le Texier, "Supplemental Material for Debunking the Stanford Prison Experiment," American Psychologist 74, no. 7 (2019): 823–39, https://doi.org/10.1037/amp0000401.supp; S Alexander Haslam, Stephen D Reicher, and Jay J Van Bavel, "Rethinking the Nature of Cruelty: The Role of Identity Leadership in the Stanford Prison Experiment," American Psychologist 74, no. 7 (2019): 809–22, https://doi.org/10.1037/amp0000443.supp.
[52] Zimbardo et al., "The Stanford Prison Experiment: A Simulation Study of the Psychology of Imprissityonment Conducted August 1971 at Stanford University [On-Line Slide Show]."
[53] Gregory, "Dismembering the Dead: Violence, Vulnerability and the Body in War."; Giroux, "Disturbing Pleasures: Murderous Images and the Aesthetics of Depravity."
[54] Gregory, "Dismembering the Dead: Violence, Vulnerability and the Body in War."
[55] Idem.
[56] Giroux, "Disturbing Pleasures: Murderous Images and the Aesthetics of Depravity."
[57] Noelie Rodriguez and Alan L. Ryave, "The Structural Organization and Micropolitics of Everyday Secret Telling Interactions," Qualitative Sociology 15, no. 3 (1992): 297–318, https://doi.org/10.1007/BF00990330.
[58] Georg Simmel, "The Sociology of Sececy and of Secret Societies," American Journal of Sociology 11, no. 4 (1906); Erving Goffman, "The Presentation of Self in Everyday Life," Teacher 21, no. 5 (2005): 259, https://doi.org/10.2307/2089106.
[59] Jared Piazza and Jesse M. Bering, "The Coevolution of Secrecy and Stigmatization," Human Nature 21, no. 3 (2010): 290–308, https://doi.org/10.1007/s12110-010-9090-4.
[60] David R. Gibson, "Enduring Illusions," Sociological Theory 32, no. 4 (2014): 283–306, https://doi.org/10.1177/0735275114558631; Ekman, Telling Lies, 2009.
[61] Paul Ekman and Wallace V. Friesen, "Hand Movements," The Journal of Communication, 1973, https://doi.org/10.1111/j.1460-2466.1972.tb00163.x; Letizia Caso et al., "Processes Underlying Deception: An Empirical Analysis of Truth and Lies When Manipulating the Stakes," Journal of Investigative ... 2, no. 3 (2005): 195–202, https://doi.org/10.1002/jip.32; Aldert Vrij, Gun R. Semin, and Ray Bull, "Insight Into Behavior Displayed During Deception," Human Communication Research 22, no. 4 (1996): 544–562, https://doi.org/10.1111/j.1468-2958.1996.tb00378.x.
[62] Larson & Chastain, 1990.
[63] Larson et al., 2015.

[64] Larson and Chastain, "Self-Concealment: Conceptualisation, Measurement, and Health Implications"; Andreas A.J. Wismeijer, "Self-Concealers: Do They Conceal What We Always Assumed They Do?," Personality and Individual Differences 51 (2011).
[65] David William Mac Gillavry, "Rethinking Secrecy in Religion: Cognition and the Intimacy of Secrecy," Method & Theory in the Study of Religion 30, no. 4–5 (2018): 301–20, https://doi.org/10.1163/15700682-12341430.
[66] Simmel, "The Sociology of Sececy and of Secret Societies"; Hugh B Urban, The Economics of Ecstasy: Tantra, Secrecy and Power in Colonial Bengal, 2001; Maria K. Venetis et al., "'You Can't Tell Anyone but ...': Exploring the Use of Privacy Rules and Revealing Behaviors," Communication Monographs 79, no. 3 (2012): 344–65, https://doi.org/10.1080/03637751.2012.697628.
[67] Goffman, "The Presentation of Self in Everyday Life"; Gibson, "Enduring Illusions."
[68] Urban, The Economics of Ecstasy: Tantra, Secrecy and Power in Colonial Bengal.
[69] Mac Gillavry, 2018.
[70] Idem.
[71] Sissela Bok, Secrets: On the Ethics of Concealment and Revelation (New York: Pantheon Books, 1983); Rodriguez and Ryave, "The Structural Organization and Micropolitics of Everyday Secret Telling Interactions."
[72] Sandra Petronio, Boundaries of Privacy: Dialectics of Disclosure, 2002, https://doi.org/MAI BF697.5 S427 P48 2002; Venetis et al., "'You Can't Tell Anyone but ...': Exploring the Use of Privacy Rules and Revealing Behaviors."
[73] Venetis et al., "'You Can't Tell Anyone but ...': Exploring the Use of Privacy Rules and Revealing Behaviors."
[74] Rodriguez and Ryave, "The Structural Organization and Micropolitics of Everyday Secret Telling Interactions."
[75] Mac Gillavry, "Rethinking Secrecy in Religion: Cognition and the Intimacy of Secrecy."
[76] Browning, Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland, 72.
[77] Jones, My Lai: Vietnam, 1968, and the Descent into Darkness, 85.
[78] James S. Olson and Randy Roberts, My Lai: A Brief History with Documents (Boston: Palgrave Macmillan, 1998), 123.
[79] According to Michael Bernhardt in his testimony before the Peers committee in 1970; See: Olson and Roberts, 123.
[80] Olson and Roberts, 124.
[81] Asch, 1956; Berns et al., 2005a; Klucharev, Hytönen, Rijpkema, Smidts, & Fernández, 2009; Kundu & Cummins, 201.
[82] Daniel Rigney, "Secrecy and Social Cohesion," Society, 1979.
[83] Giroux, "Disturbing Pleasures: Murderous Images and the Aesthetics of Depravity"; Guy B Adams, Danny L Balfour, and George E Reed, "Abu Ghraib, Administrative Evil, and Moral Inversion: The Value of 'Putting Cruelty First,'" no. October (2006).
[84] Gray and Martin, "My Lai: The Struggle Over Outrage"; Cookman, "An American Atrocity: The My Lai Massacre Concretized in a Victim's Face."
[85] Zimbardo et al., "The Stanford Prison Experiment: A Simulation Study of the Psychology of Imprissityonment Conducted August 1971 at Stanford University [On-Line Slide Show]."
[86] Asch, "Studies of Independence and Conformity: I. A Minority of One against a Unanimous Majority."; Kundu and Cummins, "Morality and Conformity: The Asch Paradigm Applied to Moral Decisions"; Berns et al., "Neurobiological Correlates of Social Conformity."
[87] Asch, "Studies of Independence and Conformity: I. A Minority of One against a Unanimous Majority."
[88] Browning, Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland; Olson and Roberts, My Lai: A Brief History with Documents; Jones, My Lai: Vietnam, 1968, and the Descent into Darkness.
[89] Berns et al., 2005.
[90] I.e., individuals who know that what they are doing is wrong but engage anyways to avoid friction with the group.
[91] Gregory S Berns et al., "Neurobiological Correlates of Social Conformity and Independence During Mental Rotation," 2005, 245–53, https://doi.org/10.1016/j.biopsych.2005.04.012; Sandy Overgaauw et al., "Neural Mechanisms Involved in Social Conformity and Psychopathic Traits : Prediction Errors, Reward Processing and Saliency" 13, no. July (2019): 1–13, https://doi.org/10.3389/fnbeh.2019.00160.
[92] (Felix-Ortiz, Burgos-Robles, Bhagat, Leppla, & Tye, 2016; J. Ledoux, 2003; Ledoux, 2014; Mchugh et al., 2014; Roesch, Brockett, & Daniela, 2021.
[93] Overgaauw et al., "Neural Mechanisms Involved in Social Conformity and Psychopathic Traits : Prediction Errors, Reward Processing and Saliency."
[94] Neil Burgess, Eleanor A Maguire, and John O Keefe, "The Human Hippocampus and Spatial and Episodic Memory" 35 (2002): 625–41; Chris M Bird and Neil Burgess, "The Hippocampus and Memory : Insights from Spatial Processing" 9, no. March (2008), https://doi.org/10.1038/nrn2335; Larry R Squire and Carolyn Backer Cave, "The Hippocampus, Memory, and Space" 1, no. 3 (1991): 269–71.

[95] Berns et al., 2005.
[96] At present, there is not enough data to assume causation.
[97] David William Mac Gillavry and David Ullrich, "A Novel Theory on the Predictive Value of Variation in the β -Endorphin System on the Risk and Severity of PTSD the Risk and Severity of PTSD," Military Psychology 32, no. 3 (2020): 1–14, https://doi.org/10.1080/08995605.2020.1730111; Norman Jones et al., "Leadership, Cohesion, Morale, and the Mental Health of UK Armed Forces in Afghanistan," Psychiatry: Interpersonal and Biological Processes 75, no. 1 (2012): 49–59, https://doi.org/10.1521/psyc.2012.75.1.49.
[98] Asch, 1956.
[99] Asch, 1956.
[100] We are not the first to address this issue. A similar point was made very effectively in: Hannah Arendt, Eichmann in Jerusalem: A Report on the Banality of Evil (Penguin Books, 2006), and: James Waller, "Perpetrators of Genocide: An Explanatory Model of Extraordinary Human Evil," Journal of Hate Studies 1, no. 1 (2002): 5, https://doi.org/10.33972/jhs.2.