UNDERSTANDING MODERN COGNITIVE WAR IN THE GLOBAL DIMENSION, ITS GENESIS IN THE UKRAINIAN CONTEXT: A REVIEW AND DIRECTIONS FOR FUTURE RESEARCH

Cognitive warfare and social impact operations

Abstract

The aim of the article is to examine an overview of historical western military thought on Theory of War and its relationship to Cognitive Warfare nowadays, as well as Ukrainian evidence for the efficacy of global resistance to Russia’s invasion of Ukraine. The study results showed that understanding the genesis of Cognitive Warfare in the Ukrainian context over 2014-2023 focused on brain, as the battlefield, and using social impact and psychological operations, neurosciences, social engineering had the goal to destroy human thinking, behaviour, social and military identity not only of Ukrainians, but globally.

Abstrakt

Cílem článku je prozkoumat přehled historického západního vojenského myšlení o teorii války a jeho pojetí kognitivní války v současnosti, jakož i ukrajinské důkazy o účinnosti globálního odporu proti ruské invazi na Ukrajinu. Výsledky studie ukázaly, že při pochopení geneze kognitivní války v ukrajinském kontextu v letech 2014-2023, kdy je bojištěm mozek, je cílem využití sociálního dopadu a psychologických operací, neurověd a sociálního inženýrství zničit lidské myšlení, chování, společenskou a vojenskou identitu nejen Ukrajinců, ale všech globálně.

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Keywords
Potential of Cognitive Warfare; human mind; weaponization of brain sciences; social impact activities, NATO’s Cognitive Warfare Doctrine; Clausewitz’s “warlike element”.

Klíčová slova
Potenciál kognitivní války; lidská mysl; weaponizace neurověd; aktivity se sociálním dopadem, doktrína kognitivní války NATO; Clausewitzův „bojový prvek“.
Introduction

The crystallization of Ukrainian identity occurs through turning points in history, among which revolutions and war play a decisive role. The Ukrainian people are hardened by passing a common test, and this leads to significant transformations and changes in society. The pattern of changes in the Ukrainian society during the cognitive warfare had a significant impact on the development and transformation of national identity, as well as professional military identity, in particular. The given problem is of utmost importance from the theoretical and methodological issues of Russian-Ukrainian Cognitive Warfare lessons as it deals with the Cognitive Science and cognitive processes of waging modern war aimed at human mind manipulation and destruction. The brain makes decisions, and how militaries make decisions when faced with a particular type of choice under uncertainty and risk, is a disputable and relatively neglected area of investigation in military studies of cognitive war today to confer a strategic advantage.1

War of Russia against Ukraine influenced the identity structure not only of ordinary citizens, but also of servicemen of the Armed Forces of Ukraine. Their heroic, selfless struggle for Ukraine, unity, solidarity, patriotism, trust, professional identity, and professional consciousness, values that are a manifestation of trans-generational call bonds with the culture of ancestors, the genetic code of the Ukrainian nation: sociopsychological types in which the genetic indicators of the Ukrainian nation are encoded.2 Since the start of Russia’s invasion of Ukraine on February 24, 2022, the Ukrainian army launched large-scale counterattacks, making effective use of emerging technologies of Cognitive Warfare, which strongly differentiates the given warfare potential in the Ukrainian context from other types of warfare.

Effective collection of military information and application by the Ukrainian Armed Forces of manned and unmanned intelligence-gathering aircraft and military reconnaissance satellites (drones, missiles, Starlink satellites, commercial satellites, electromagnetic intelligence, social media, encrypted messaging, cyber warfare) is a specific feature of Russian-Ukrainian Cognitive Warfare. Added to that, commercial satellite imagery by Western commercial communications companies has become invaluable source of information to provide high-resolution imagery to Russian and Ukrainian Force Disposition in real time and, thus, to achieve their cognitive dominance in speed processing (information), mapping a location theatre, promoting information on the side of fear. One more peculiarity helping in understanding the genesis of the cognitive warfare in Ukrainian conditions is due to Clausewitz’s concept of “warlike element” (kriegerische Element)3 and its relationship to Ukrainian people’s war, and the arming of the whole nation (Volksbewaffnung). The warlike element synthesizes human feelings of hatred (HaB) and enmity (Feindschaft), which Clausewitz defined as a “blind natural instinct” (ein blinder Naturtrieb) or enthusiasm for fighting. The warlike element appears in Clausewitz’s trinitarian conception of war’s nature as enmity or hostility, and which he understood to be war’s true spirit or essence (Geist). It

2 URIJ, M. F. Ethnogenesis and Mentality of the Ukrainian People. 2007 Kyiv: Condor books. (In Ukrainian)
holds true regarding the Ukrainian defence of Kyiv in 2022, as presenting a vivid, modern example of adequacy and topicality of Clausewitz’s war heredity: Clausewitz’s warlike element and his notion of people’s war combined. What is striking, though, is that the 112th and 114th Territorial Defence Forces, 72 Mechanized Infantry Brigade together with Ukrainian civilians armed with the most basic of weapons from Molotov cocktails to Kalashnikovs defended their capital - Kyiv - from invasion. These cases confirmed Clausewitz’s statements that a people fighting for freedom, and independence on its home ground, together as a unified entity, is unconquerable.

Of further important note, worth mentioning and further conceptual research, is how a nation in arms can succeed. Clausewitz pointed out to five major preconditions: 1) a people’s war must be waged within the borders of the country; 2) not be decided by a single blow; 3) over a large expanse of a territory; 4) by a defender with a suitable national character; 5) across a rough and inaccessible countryside. Our research project team considers the given Clausewitz’s view on ways of succeeding in a war, entirely valid to Ukrainian Cognitive Warfare situation to date as it summarizes and complements knowledge on the impact and role of social impact activities in a people’s war. It is also emphasizing that it is a constructive process for a total nation in arms that stimulates involvement and interaction of both militaries and civilians on the way to victory.

**Methodology, Aims and Scope**

In the complex of mutual connected factors of contemporary Cognitive Warfare on which the effectiveness of the professional identity of Ukrainian servicemen of various categories, military units, Territorial Defence Forces, Ukrainian civilians, military administration depends, the Doctrine of Military Leadership, which was approved by the Armed Forces of Ukraine on December 4, 2022, acts as a system-forming factor. The Doctrine emphasizes that military leadership is a key component of ensuring the professional activities of servicemen and aims to systematize the ideas, beliefs, views and principles of military leadership, define and reveal the essence of fundamental leadership values in the Armed Forces of Ukraine, provide clear characteristics of the leader’s identity in the Ukrainian army.

Thus, the consistency of our research with the urgent needs of Ukrainian society, the key positions of the Doctrine and the adopted Laws of both the protection of Ukrainian and civil identity, the affirmation of national values in the conditions of war, explains the urgency of the chosen topic of this research.

The purpose of the given study is:

- to analyse, understand the key assumptions of Cognitive Warfare in the historical and global dimensions based on critical analysis of scientific discourse of the history of War Theory;
- to identify Cognitive Warfare, its nature and characteristics, genesis in the Ukrainian context and its impact on global security;

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5 Armed Forces of Ukraine. Doctrine of Military Leadership of Ukraine. [cit. 2022-12-04]
to describe how the Ukrainian youth and middle-aged people understand the new norm of life and defence of the country related to the 2022 full-scale Russian invasion to Ukraine.

We hypothesized that understanding the genesis of the Russian-Ukraine Cognitive Warfare in the global and Ukrainian contexts will provide new knowledge on:

Hypothesis 1. Cognitive Warfare trends in Ukraine as the invasion that symbolizes the beginning of a new era in social impact activities employed by Ukraine in 2022-2023 for influencing public opinion, both native and foreign;

Hypothesis 2. Creation and disseminating of information threats in producing and translating (reporting) fake information in traditional and modern media;

Hypothesis 3. Impact of information operations on global security, geopolitical advantage and defence;

Hypothesis 4. Ways in which Ukrainian youth, as the future intellectual potential of the country, understand the new norms of life and defence of the state during war times.

Thus, the given paper provides summaries of the basic questions military experts have posed about modern Cognitive Warfare in the global dimension and its genesis in the Ukrainian context. Consequently, the article is subdivided into three parts. The first part introduces the history of War Theory, dating back 2000 years ago till now, focusing on the classification of three stages in the development of War Theory suggested by us. The purpose is to clarify the nature and characteristics of contemporary Cognitive Warfare and learn lessons from previous war battles. The second part addresses the study of strategic lessons from the Russia-Ukraine Cognitive Warfare for the sake of global security and defence. The third part dwells on the results of the research on how Ukrainian youth (young, middle-aged people, and young scientists) understand a new norm of life and defence of the country in wartime conditions and relate to learning in the face of Russian full-scale invasion of Ukraine.

**Method**

In the transdisciplinary, pilot study a set of theoretical and empirical methods were applied. In Part 1 of the given article we made use of theoretical and methodological analyses, systematization, generalization of the study’s subject matter; Part 2 included surveys, interviews, tests, content analysis, Rorschach technique, Genetic-Creative Approach. In Part 3, the Scale of Non-Clinical Assessment of Behavioural Changes and Social Functioning (developed by V. Lunov) was applied. The aim of the experimental research was to reveal the evolution of Theory of War and to understand the nature, characteristics of modern Cognitive Warfare in Ukraine. It is grounded on the available data collected applying the method of narrative literature review. To further the goals of the research, case studies (No. 1-4) were provided to illustrate Cognitive Warfare in the Ukrainian context as conceptualized above. Case studies were selected illustrating security implications of different forms of propaganda, namely: false

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information, fake news. Alongside with this, we made use of Genetic-Creative Approach,\(^7\) the basis of which is the Genetic Psychology theory of a person’s creative competent training and development. The “Scale of Non-Clinical Assessment of Behavioural Changes and Social Functioning” developed by V. Lunov was used in Part 3 of the article.

The total number of subjects was equal to 4891 persons, of young and middle-aged people as well as young scientists of both genders, aged from 16 to 40 years old, from 61 Ukrainian cities, during the period of April 2022 till January 2023. The study was carried out in accordance with the Projects Plan of Laboratory on Psychology of Learning at G. S. Kostyuk Institute of Psychology of the National Academy of Educational Sciences of Ukraine (No. 0121U107603, 2021-2023) and Bogomolets National Medical University (No. 0120U100656, 2020-2022).

Additionally, we also based our conclusions on the authors’ participatory observation of the development of hybrid war in Ukraine since 2014. Then, its evolution into Cognitive Warfare in 2022-2023 as well as lessons learned from international and military research projects on the issue contributed substantially to the transdisciplinary understanding of its nature, characteristics, and evolution. Along with it, the case studies illustrating security implications of false information by Russian militaries in online environment of Ukraine were selected for their theoretical hypotheses relevance, exhibiting the properties listed above, as well as topicality.

**Theoretical Framework**

In order to understand the nature, characteristics, role, and potential of modern Cognitive Warfare in the global dimension and its genesis in the Ukrainian context, we would attempt to comprehend the oldest, classical theories of war, and proven military thought over the last two centuries. There are numerous military studies that focus on War Theory, but researchers have a limited focus on the analysis of military theories that are relevant to understanding its evolution across fighting domains in Ukraine over the years 2014-2023. This Cognitive Warfare exploration is of vital importance both for the global community and this country to better comprehend, anticipate, and respond to complex problems of today’s and future operations security challenges. Hence, this research aims to identify and encourage these lines of inquiry, to dive deeply into the greater understanding of Cognitive Warfare conducted by Russia in Ukraine. It also has the goal to urge the global military community to learn the data available from the Ukrainian experience of contemporary warfare. It is increasingly vital for Ukrainian military theorists, top thinkers, and leaders to understand the evolution of military theory and its principles and grasp innovations. It is also needed for better understanding the new changing character of Cognitive Warfare, its basic principles, methods, means of action, strategies which utilize NANO, BIO, INFO, and COGNO technologies, for the future cognitive dominance, achieving strategic victory, and bypassing traditional battlefield. The scan of literature on the issue made it possible for us to attempt suggesting roughly three stages in the development of War Theory, based on the following criteria: 1. its fundamental purpose; 2. logic (principles); 3. indicators; 4. potential; 5. factors of dominance; 6. means of action (proven strategies); 7. relevance to modern war context at its strategic and operational level.

\(^7\) Ibid. p. 174
In an attempt to clarify the nature of Cognitive Warfare, we will also apply these criteria to trace its genesis in the Ukrainian context nowadays. As we have mentioned above, we subdivided the history of War Theory into three stages, including scientific issues of outstanding military authors and modern scientists' studies evaluating their contribution. The first dating back to 544-496 BC and the 19th century, then the 20th century, and the following stage of the beginning of the 21st century.

- Stage 1: Classical military theories: Sun Tzu,8 Carl von Clausewitz,9 etc.
- Stage 2: Evolutionary theories and principles of waging war: Michael Howard,10 Olivia Garard,11 Sibylle Schheipers,12 Youri Cormier,13 etc.
- Stage 3: Contemporary theories of psychological war: information warfare, Hybrid, Cognitive and Intelligent War theories: B. Claverie,14 B. Prebot, N. Buchler, F. du Cluzel, Robert Reczkowski and Andrzezej Lis,15 Vladimir Bizik, Emile Simpson, S.Pradhan, Arushi Singh, Jan Angstrom, Jerker Widen, Jennifer Kavanagh, Ben Soodavar, Eric Gartzke and John Lindsay, etc.

Over the past few years, recognition of the urgency of designing effective counter methods against means of Cognitive Warfare which meet the requirements of modern neuro-psycho-computational attainments has caused a quantum leap in the attention paid to heredity of the ancient military strategist Sun Tzu (544-496 BC). Sun Tzu wrote more than 2000 years ago on the issue of war and military strategies. And this is considered to be the oldest military treatise in the world. His classical military theory is formulated in his writing “The Art of War” with a purpose to put a special emphasis on psychological consideration of information which is distributed during a war; intuition of a military leader to adapt to unforeseen circumstances, which are as relevant today as they were back then. Sun Tzu recognizes that a warrior-leader must be strategically minded, a critical thinker, and skilful. The premise of the Art of War should be avoided with diplomacy, affirms Sun Tzu. The war scholar compares metaphorically the changing nature of war with running water and its logic (principles) is reflected in the following quote “and as water has no constant form, there are in war no constant conditions”.16

The six cornerstone principles of his teaching realize the art of strategy and leadership, they are relevant to modern times, we believe. These principles are as follows:

- win all without fighting;
- avoid strength;
- attack weakness;
- deception and foreknowledge;
- speed and preparation;
- shape your opponent and character-based leadership.

Among factors of dominance providing the art of war, General Sun Tzu points out five, namely: 1. the moral law; 2. heaven; 3. earth; 4. the commander; 5. method and discipline. The potential of Sun Tzu’s theory of war lies in the level of analysis of strategies preceding the actual fighting, ranging from military preparations to diplomatic actions. The seven proven strategies advocated by him include: 1. laying plans as “all warfare is based on deception”; 2. waging war; 3. attack by stratagem; 4. tactical dispositions; 5. strong points and weak points. 6. use of spies; 7. terrain.

Overall, it can be assumed, that Sun Tzu’s 2000 years old rules and principles of war are relevant today as they project the necessary competencies and outcomes required for success in any field of knowledge: sports, business, family conflicts, wars, etc. The success is attributed to the usage of small decisions as well as flexibility, deception, diversion, and disguise: victory must be a predominated certainty. All of the above imply that the classical theory of the Art of War and warfare contributes profoundly to the modern Russian-Ukrainian Cognitive Warfare tactics and strategies used by opponents during the invasion.

The next influential, classical Theory of the Nature of War, as viewed by military experts, is presented by the Prussian soldier-scholar Carl von Clausewitz (1780-1831) in his outstanding publication “Principles of War”. The given theory is considered to be universal as to the nature and strategy of war; it is applicable to understanding the nature of modern wars, though sometimes of a disputable character, and the idea of victory, as well. He posits the nature and logic of war in nine principles, namely: objective, offensive, mass, economy of force, manoeuvre, unity of command, security, surprise, and simplicity. Clausewitz analysed the conflicts of his time grounding on three categories: Purpose, Goals, and Means. The main purpose of war, according to master theorist of war Clausewitz, is continuation of politics but implementing other means of influence, and, at the same time, using it as an instrument for achieving political goals. In famous Clausewitz’s saying, war is more than a chameleon, and its evolution changes with the environment changes, supported by “a wondrous trinity”. Elements of this trinity (indicators) are as follows: primordial violence, hatred, and enmity. He explains that “the first of these three aspects concerns more people, the second one more the commander and his army, the third one more the government”.

Regarding the goal of the conflict, he reasoned that primarily it is to defeat the opponent in order to exact the purpose. For Clausewitz, war is one of the means of proceeding with political act and intercourse, which is supported by military force to achieve political ends. Strategy of war is defined by the author as making choices on how we will concentrate our limited resources to achieve competitive advantage. These factors of dominance will ensure

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a military victory which he describes as a condition where the enemy’s ability to enter battle, resist or resume hostilities is destroyed, the will of the enemy must be broken. To sum it up, we will inquire if Clausewitz’s thinking is still relevant, and what its potential as regarding Russian-Ukrainian Cognitive Warfare. The same question, exploring war’s character and its nature in contemporary conflict, is put by Emile Simpson.\textsuperscript{18} She interrogates “… whether Clausewitz’s account of the nature of war is universal to all wars, in order then to assess how far his concept of victory is universal.”

So, is Clausewitz’s definition of the enduring nature of war still valid for Russia-Ukrainian cognitive warfare? Could we possibly agree that dominant tendencies always make war a paradoxical trinity - composed of primordial violence, hatred and enmity? In the Ukrainian context, as we, authors of the article, know and observe it daily, Cognitive Warfare is composed of unprecedented violence, unpredicted cruel missiles’ attacks on residential apartments in cities Dnipro, Zaporizhzhia, Bakhmut, etc., and political control. That is why, though the nature of Russian-Ukrainian war changes, some Clausewitz’s ideas on principles and characteristics of war, mentioned above, are still valid for Ukraine, which is a total nation in arms. In this situation, we consider quite appropriate and extremely valid the statement of Flavius Vegetius Renatus (5\textsuperscript{th} century), who teaches in his writing “De re military”: “And he, who hopes for success, should fight on principle, not chance. No one dares to offend or insult a power of known superiority in action.”\textsuperscript{19}

By summarizing the above mentioned, we will try to increase and broaden our understanding of Clausewitz’s initial dual conception of war, and particularly, his three fundamental premises being applicable to the analysis of the Russian-Ukrainian large-scale Cognitive Warfare. Frequently cited notions in scientific-based research and military practice are: the notion of defence which is treated as a stronger form of war; status quo has inertia; war has duration. We strongly believe that Clausewitz’s lessons concerning: a) trinity indicators; b) means of war; c) limited resources in achieving competitive advantage provide for a Ukrainian people a thoroughly unique perspective of understanding relationships between war, peace, and politics.

The second stage in the classification of history of War Theory suggested by us is characterized by rapid changes in the comprehending the nature of war due to technological advances in the 20\textsuperscript{th} century. The specificity of Evolutionary Theories and Principles of waging war since 1900-1991 focus on the military theory dealing with changes in the evolution of nature of war and in warfare: say, World War I, World War II, Cold War, attrition, manoeuvre, total wars which are considered as the exercise of military power and military force.\textsuperscript{20} Weapons and artillery have improved drastically and technology has also been a fundamental part of it.

At this point of our speculations, we would like to emphasise that modern Cognitive Warfare under the discussion will be analysed with the same methodology to realise if there are recurring trends in present day Warfare, and whether Principles of War of the past century are still universally true and timeless.

\textsuperscript{18} SIMPSON, Emile. Clausewitz’s Theory of War and Victory in Contemporary Conflict. 2017 The US Army War College Quarterly Parameters 47, No. 4, pp. 7-18.
Thus, a look at the history of warfare of the given period in comparison with the previous one makes it possible to witness the changes as a result of technological developments. As we mentioned earlier, the 20th century saw an explosion of technological innovations due to the Industrial Revolution in warfare development, namely: automatic machine gun-style weapons, vehicles capable of fight, being able to drop bombs, cannons, poisonous gas, nuclear energy - were produced. Hence, the paradigm of war theory in the 20th century changed greatly over the course of the century. It was manifested in the logic (principles) of war, its indicators, potential, means as an impact on society and human life. It was found that the concept of war substantially changed and: “Instead of fighting in trenches, troops began to take cover in shell craters and foxholes, rather than hunker down in set lines. There were also more ways for troops to get to the battlefield, with motorized vehicles, railways and airplanes”.  

Consequently, “The Grand strategy was based on mobilization and deployment of national resources of wealth, manpower, and industrial capacity, together with those of allied for the purpose of achieving the goals of national policy…”

In light of this, British historian J.F.C. Fuller23 singled out nine Principles of War, which could create the factors of dominance and success on the battlefield. These are: mass, objective, offensive, simplicity, economy of force, manoeuvre, unity of command, security, and surprise. The findings34 proved that the 20th century war strategies destroy communities and families and often disrupt the development of the social and economic fabric of nations. Its impact on human life is connected with physical death of a person, wounds, disability, illnesses, depression, anxiety, injury, post-traumatic stress disorder (PTSD), etc. Summarizing, Theory of War of the analysed stage places a serious emphasis on understanding both change and continuity in an armed conflict, and how to crush the enemy by brute force. The military history of war in the 20th century was caused by economic, religious, ideological, territorial as well as long-term and short-term wars. More specifically, wars of that period were fought primarily for economic, religious, and political purposes.

One of the comprehensive studies, in our view, examining war’s fundamental nature and character endured or changed in the European history is presented by Michael Howard.25 Measures of military capacity are embodied in the perception of relative effectiveness of war and its lessons. Military literature has a bulk of investigations on the issue of how to win a 20th century battle and ensure success. A winning formula of the victory suggests the lessons which could affect our identity, memory and values in the 21st century battlefields. Therefore, the knowledge of how: to raise morale; keep your opponent guessing; to be aware that careless talk costs lives - security is a must; to provide surprise and unexpected actions to paralyse opponents’ decision-making and shock commanders into inactivity; not to forget

quality versus quantity; to remember amateurs talk tactics, professionals discuss logistics; to expect the unexpected: always have Plan “B” are the most reasonable in the Ukrainian context nowadays.

Further development of War Theory was conceptualized in the framework of the third stage of our classification in the notions of Contemporary Theories of Psychological War and Warfare in the 21st century. The stage presents the analysis of scientific achievements in Psychology of Human Cognition being applied to the military context. It also deals with the innovative trends on Cognitive Warfare presented in the reports during the first Symposium on Cognitive Warfare (France, June 2021) and on Psychological Warfare (PSYWAR).

It is the umbrella term which is widely used to describe the basic aspects of today’s psychological operations (PsyOp) as well as Military Information Support Operations (MISO), political warfare, “Hearts and Minds” and propaganda. The term Psychological Warfare is not new: the use of psychological means in military discourse and the definition was suggested in 1955 by Bela Szunyogh. It means “any action which is practiced mainly by psychological methods with the aim of evoking a planned psychological reaction in other people”.

Strategic military scientists affirm that today’s understanding of five war-fighting domains, that is, air, land, sea, space, cyberspace has expanded: the 6th - cognitive domain has been added. In terms of defining the problem under the discussion, we would address Encyclopaedia Britannica which defines that “psychological warfare, also called, Psywar, the use of propaganda against an enemy, supported by such military, economic, or political measures as may be required.”

The basic principles (logic) of psychological warfare are the target audiences, the messages, and the means of delivery. The goal of psychological warfare is to intentionally use propaganda to manipulate another and break down their will without using physical force. It is worth noting, that the given characteristic of modern war reveals its genesis and evolution based on advanced technologies and “the intensive use of influence operations which form the cognitive warfare propaganda they have now taken a shape of warfare with their strategic use at the scale and scope not witnessed earlier”.

Of huge objective potential is considered to be propaganda considered as ideas or statements that are false or exaggerated and is deliberately spread to influence masses. The purpose of the Cognitive Warfare is primarily HUMAN MIND, and it is the battlefield because: “It involves

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manipulations in the cognitive domain aimed at altering perception of targets. Manipulated information is presented in such a manner that it creates a pre-determined perception resulting in a pre-determined action among audience.32

The cognitive domain includes three dimensions: “... psychological operations, engaging neurosciences i.e. weaponization of brain sciences, and implementing social engineering. Its impact is frightful: everyone turns into a weapon. It has the potential to fracture and fragment an entire society.”33

It is obvious, that it integrates cyber and psychological domains to program the desired behaviour patterns of the targeted audience, and to deprive it of the collective will to resist. Means of action in Cognitive Warfare include manipulation via leaflets, radio or other media broadcasts, visual intimidation, fake social media accounts, and the use of propaganda to encourage an enemy’s surrender or terror. Strategies being utilized influence the audience’s value system, belief system, emotions, motives, reasoning, or behaviour.34

The latest comprehensive publication which included the newest information on the first NATO scientific meeting on Cognitive Warfare by Claverie et al., contains a profound article by Bernard Claverie and Francois du Cluzel, and provides a global overview of developments and changes in Cognitive Warfare.35 Alongside with this, it is concluded that there are different technical aspects between Psychological Operations and Cognitive Warfare, thus, the Cognitive Warfare is “a companion to Psychological Operations (PSYOPS).”36

Proceeding from this recognized conclusion, and given the above context, we would address other points of view on the nature and characteristics of modern Cognitive War. In terms of Bernard Claverie: “Cognitive war is now seen as its own domain in modern warfare. Alongside the four military domains defined by their environment (land, maritime, air, and space) and the cyber domain that connects them all.”37

And, then, the question arises: What changed the face of modern Cognitive Warfare in Ukraine?

The nature and indicators of the Cognitive War, according to Claverie, are “essentially invisible; all you see is its impact, and by then... it is often too late.”38

Regarding the above, it is of particular significance to stress the role of social impact activities which essentially change and shape the basis for the Ukrainian Cognitive Warfare in the context of information operations with the help of propaganda and mass media.

Thus, the purpose of the Cognitive Warfare, its logic as a technology to impact our individual intelligences should be considered both individually and as a group.39

32 Ibid. p. 2
33 Ibid. p. 3
36 Ibid. pp. 2-3
37 Ibid. pp. 2-1
38 Ibid. pp. 2-1
39 Ibid. pp. 2-1
As we have already mentioned, it is used on a global space, includes the usage of cyber tools to destroy or change the opponent’s cognitive mental processes, reflexive and critical thinking, cognitive self-control, and, as one of the consequences, badly damages the decision-making process, provokes cognitive stress. Strategies are focused at carrying out a combat, surveillance, or security action. Factors of dominance sought are an alteration of world views, thereby affecting peace of mind, certainties, competitiveness, and prosperity.40

A multitude of authors have subsequently proposed different levels of Cognitive Warfare investigation reflecting two basic points of view. The first realized on the global level to manipulate minds; the second based on the available cyber tools.41 The development of defensive techniques and effective deterrent options of dealing with consequences presupposes “...ensuring the cognitive security of individuals, facilitating the efficient running of state structures, and establishing and maintaining cognitive superiority for decisive action.”42

What then must be improved and developed from a defensive point of view?

“Further challenges relate to improving competitiveness, developing and certifying the performance of intelligent systems or artificial intelligence systems intended to augment human labour, improving collective intelligence of Human-Autonomy Teaming (HAT).”43

To sum it up, the current review found a large range of outcomes on history of Theory of War and Cognitive Warfare evaluated across times. It allowed us to uncover: 1. significant contributions of world-known military theorists, military thinkers, strategists, and experts regarding the nature and characteristics of war across war fighting domains from the ancient times till now; 2. the commonalities and differences in military thoughts, which, in our view, reflect cross-cultural, political, social, economic, technological, psychological, neuropsychological, intelligent aspects of War Theory, especially, in various times and environments; 3. the application of Military Theory Developments to modern security challenges in the Ukrainian context as it drives to think deeper and creatively about the role and impact of Cognitive Warfare in a contemporary global society and Ukraine, in particular; 4. moving from the idea of war as a continuation of politics to understanding attritional warfare using physical domain and firepower, to manoeuvre, hybrid forms43 (to weaken the enemy state from within), then, to the Cognitive Warfare focused on the mental domain, helping Ukrainian militaries and leaders to derive lessons, concepts, ideas, and their role and potential as:

a) the basis for decision making in strategy, planning and operations;

b) the potential for achieving a strategic victory of Ukraine in the Cognitive Warfare.

For these reasons, this summary addresses the NATO philosophy of victory, which is defined more in terms of achieving the psycho-cultural rather than the geographical high ground. At this point, this body of work strongly suggests inquiring: How do the lessons of the Cognitive Warfare in Ukraine can change the Theory of War?

40 Ibid. pp. 2-3
41 Ibid. pp. 2-4
42 Ibid. pp. 2-5
The War in Ukraine Has Changed History: Stability of the Euro-Atlantic Region

According to analytical reports and assessments of Western military experts, the Ukrainian army fights with great cohesion and good tactical training. Along with it, evaluating the genesis of the Cognitive Warfare in Ukraine in the global dimension, investigators are looking at exactly at “how the Ukraine war changed history”. As stated in the Strategic Concept of NATO from 2022 “a strong, independent Ukraine is of vital importance for the stability of the Euro-Atlantic region.”

Therefore, against the background of Ukrainian lessons and achievements of the organization of effective Ukrainian resistance to the Russian invaders, NATO carried out a fundamental rethinking of its military strategy concept of deterrence, defence of the Euro-Atlantic region. Ukrainian Armed Forces for the first time demonstrated what was considered impossible according to theorists’ calculations: they resisted the war.

In this context, NATO’s changed priorities are not based on traditional areas that were previously highlighted by combat operations, for example: logistics, interoperability, combat readiness, reserves, stability. Under the new, specific Ukrainian realities of waging war, the ability of the Ukrainian Armed Forces and the population of Ukraine to withstand came to the fore, and demonstrated the decisive role of the resilience of civil society, the fighting spirit of the Armed Forces, well-prepared and available reserves.

So, what can other countries learn from Ukraine to prepare for a potential war? The Ukraine war shows how the nature of power is changing.

The war against Ukraine enforced defining new leading priorities for the planning and development of the NATO Armed Forces, taking into consideration the military professional experience of the servicemen of the Armed Forces of Ukraine, which were obtained in combat operations using modern military technologies with the help of NATO.

Polish military experts, touching upon the problem of our actual knowledge about the Cognitive Warfare and the ways to build resilience, indicate “…acquiring information and shaping decisional space before and during a conflict is a key success factor in contemporary conflicts.”

Ukrainian researchers Borys Parakhonsky and Halyna Yavorska point out: “The full-scale and unprovoked invasion of the Russian Federation into Ukraine, as well as the further

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development of the conflict, dramatically changed the international community’s perception of the stability peace in Europe.”  

Hence, we consider that it is very important to learn and understand the genesis of Cognitive Warfare from each other and another nation’s experiences with barriers, obstacles, decision-making solutions in different countries, and Ukraine, in particular. It is also of primary importance to learn how to gain cognitive superiority in Cognitive Warfare in order to resist cognitive attacks exploiting immersive and disruptive technologies by opponents, elaborate and define efficient neuro-psychological technologies and tools to prevent emotional manipulation of the people, and organize an effective cognitive defence.

Thus, in a scientific sense, the problems of a modern war with aggression of high intensity acquire extraordinary theoretical and methodological novelty and significance, since there is a constant information battle that interacts with the behaviour of people on the ground and influences it. War is a crisis that threatens the values on which society rests. The war is fought for the sake of identity. Alongside with this, it is also of utmost importance to understand how the given war affects the psychological wellbeing and the mental health of individuals in Ukraine, youth, in particular, and globally, because it is the strategy that focuses on altering “through information means, how a target population thinks - and through that how it acts.”

As for means of action “...cognitive warfare is the art of deceiving the brain or making it doubt what it thinks it knows.” In other words, deception is regarded as an attack on cognitive abilities (cognitive attack) of the person, where emotions are consistent parts of the cognition processes.

What is, then, cognition? As noticed by established cognitive researcher Daniel Kahnemann, “cognition is thinking which encompasses processes connected with perception, knowledge, problem-solving, assessment, language, and memory.” Interdisciplinary approach emphasizes:

“Neuroscientific and psychological research is now clear. No reasonable or rational decision-making is possible without emotions. Therefore, emotions are necessary for effective decision making, including war.”

Therefore, the phenomenon of modern Cognitive Warfare in the global dimension and its genesis in the Ukrainian experience receive further scientific investigation in our research in the psychological domain (Part 1). The analysis of scientific special literature shows that the last century the concept of “irresistible type of manoeuvre warfare” dominated, where the innovative integration of mobile infantry, armour, and aviation took place.

Conceptualization of the strategy of deterring the enemy led to the emergence of the concept of “Cognitive War”, described in the global scientific space as the integration of cybernetic, informational, psychological, social, and engineering capabilities to achieve military goals.53

“In wartime, truth is so precious that she should always be attended by a bodyguard of lies.” (Winston Churchill, British National Archives) The presented article draws on the latest literature to highlight a fundamental challenge in conceptualization the nature, characteristics and evolution of modern Cognitive Warfare in the global dimension. It also questions the ability of contemporary approaches to address the conceptual logic of war globally, comprehend its peculiar characteristics - Virtual Reality Environments (VREs) exploited for purposes of emotional manipulation. In light of this, there is an increasing evidence for the need to unify globally the concepts of “Cognitive Warfare”, which are dominantly connected with Cognitive Science, namely:

“Virtual Reality Environments (Meta’s Metaverse); Human Factors and Medicine (HFM); Information Systems Technology (IST); System Analysis and Studies (SAS); and the Modelling and Simulation Group (NMSG) to understand the potential of VREs, we must look to the field of psychology.”54

In our opinion, the innovative power of the given research is aimed at identifying and encouraging these lines of inquiry to urge military researchers to dive deeply into the data available from the Cognitive Warfare in Ukraine. We strongly believe that its evolution in the Ukrainian context will provide impetus not only discerning why the full-scale and unprovoked invasion of the Russian Federation into Ukraine is still being waged but also how to pragmatically utilize this knowledge of war’s outcomes to prevent manipulation of international public opinion in the future.

Before delving into the details of the research, let us define a few terms and definitions, namely: the Encyclopaedia of Multimedia, which suggests the definition of Virtual Reality and which runs like this:

“Virtual Reality (VR) is the technology that provides almost real and/or believable experience in a synthetic or virtual way. The goal of immersive VR is to completely immerse the user inside the computer generated world, giving the impression to the user that he/she has ‘stepped inside’ the synthetic world.”55

At this point of our speculations, we shall once again trace the history and etymology of the term “cognitive”. As Kuperwasser, Siman-Tov explain:

“The cognitive warfare and information strategies have been always existed and incorporated into more traditional military warfare to produce effects across traditional war fighting domains and using false information to gain an advantage over one’s opponent is

nothing new in the history of strategy but its relative weight in these wars has risen considerably in recent decades.”\textsuperscript{56}

Since the enemy’s large-scale invasion of Ukraine, NATO’s Western military experts called the war “hybrid”,\textsuperscript{57} “unconventional informational”.\textsuperscript{58} Nowadays - the term “cognitive war” is widely used, especially in the first publications of NATO Reports,\textsuperscript{59} which, according to the command of international forces, more accurately describe the hybrid processes of modern confrontation. In light of this, it is relevant to review the key concepts and the principle tenets of the theories dealing with the role of today’s virtual reality environment (VRE) and considerations for cognitive war research nowadays and findings in the global dimension.\textsuperscript{60}

The umbrella term “cognitive war” is defined in various ways by different researchers both in the civilian academia and in the military. Also a universal definition has not been agreed upon so far, “… nevertheless, it could become the foundation of doctrinal assumptions or procedures for the entities of the national security system.”\textsuperscript{61}

According to Bernal et al 2020, cognitive war is coined as:

“the weaponization of public opinion by an external entity, for the purpose of: 1) influencing public and governmental policy and (2) destabilizing public institutions.”\textsuperscript{62}

As Bjorgul Kristian concludes:

“NATO currently recognizes five war fighting domains: land, sea, air, space, and cyberspace. An increasing amount of literature suggests adding a sixth; the cognitive domain. The gap this new domain is supposed to fill is the territory fought over in the battle for the hearts and minds of a country’s population.”\textsuperscript{63}

In terms of Bernard Claverie and Francois du Cluzel:

“Cognitive warfare is thus an unconventional form of warfare that uses cyber tools to alter enemy cognitive processes, exploit mental biases or reflexive thinking, and provoke thought

\textsuperscript{56} KUPERWASSER, Y., SIMAN-TOV, Y. The Cognitive Campaign: Strategic and Intelligence Perspectives, Intelligence in Theory and in Practice. 2019-10-04 Tel-Aviv, Israel: The Institute for the Research of the Methodology of Intelligence and the Institute for National Security Studies.


\textsuperscript{58} FEINER, Lauren. Ukraine is Winning the Information War Against Russia, CNBC. [cit. 2022-03-01]. Available from: https://tinyurl.com/2u522av9


\textsuperscript{63} Bjorgul, Kristian. Cognitive Warfare and the Use of Force, Stratagem. [cit. 2021-11-03]
distortions, influence decision making and hinder action, with negative effects, both at the individual and collective levels.”

One may find a deeper understanding of the Russia-Ukraine conflict, which Shaul Shay describes as “…the intensive use of information warfare and psychological warfare which are the part of the cognitive warfare.” Additionally, the above-mentioned researcher concludes that “the main goal of cognitive warfare is to wage war on what an enemy community thinks, loves, or believes in, by altering its representation of reality.”

Thus, to sum it up, there is a range of related terms for modern war, for example, hybrid, unconventional, cognitive war, cognitive domain, informational, existential, the Russia-Ukraine conflict, but they are all targeted on the Cognitive Warfare. So, with all the above mentioned, it is crucial to answer the questions of Cognitive Warfare goals and consider the problems and challenges regarding Ukraine. The goals of the cognitive war, as stated by military experts of various countries, are aimed at: 1. destruction of the public mind; 2. cooperation with the public opinion to mislead and distort the reality; 3. different communication levels: between the leaders of the states; between the military active-duty personnel of the two countries; family communication; communication with representatives of the European Union. That is, from the theoretical and methodological positions of modern cognitology, the human mind becomes the battlefield of the modern cognitive war, especially, in the Ukrainian context. It is common knowledge that war is about power. So, it can be assumed that the genesis of Cognitive Warfare in the Ukrainian context is attributed to: a) the major understanding of the evolution in Theory of War with huge changes in its nature, characteristics, evolution and exercise of power - in terms of Clausewitz; b) competent resistance against Russia’s invasion of Ukraine by Ukrainian militaries - fight on principle, not on chance (Flavius Vegetius Renatus); c) peculiar characteristics of Ukrainian Cognitive Warfare manifested in social impact activities, the presence of warlike element in Ukrainian’s people consciousness, unified entity, enthusiasm for fighting, a spiritual need of Ukrainians for the protection of their state in the form of autonomous non-state groups acting on the international stage as influencers and true sources of unfiltered information; d) the relational power of Ukraine with NATO allies, USA, and European countries - their support created favourable conditions of giving the state both military and financial support; e) the rise of Ukrainian movement of hacktivists with high-level of IT literacy, aimed at hacking Russian websites and destroying Russian deceptive information threats; f) the active efforts of Ukrainians to break Russia’s Internet blockade and to provide communication with its citizens; g) the usage of visual memes: Ukraine-related visual memes (r/ukmemes; /r/UkraineMem; r/Ukraine22memes) highlighted some innovations and their evolution in the changing nature of Cognitive Warfare. It happened so because a visual medium is a key development for persuasion in psychological operations as well as in social impact operations, spreading information threats, increasing impact of communication on global security. They demonstrate how the world public perceives them

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and provide a commentary on a military operation, how memes correlate with political and military goals.

At the same time, the genesis of Theory of War in Ukraine proves how cognitive human abilities can be weakened by social impact activities, social networks, namely, traditional and modern mass media instruments and propaganda tools.

**An Example in Action: Case Study No. 1**

Russia’s 2014 Crimean annexation could possibly serve as the illustrative and telling example of the first, initial stage of the Cognitive Warfare against Ukraine, where psychological, national, social, institutional dimensions, and propaganda were applied.

The peculiar character of this cognitive attack was primarily focused on the information and virtual domains. In terms of Pochepsov:

“...cognitive attacks are actively using cognitive biases as a technique because they provide automatic shortcuts for mass consciousness. For example, such bias as a cognitive dissonance, prevented people of Ukraine from perceiving Russia as an enemy. In the Soviet times there existed a mythology of the ‘two Slavonic people-brothers’, so one could not frame Russian as an enemy.”

And if we analyse media instruments and propaganda tools that were used in 2014, they fully coincide with the essence of cognitive attacks and media instruments used in the 2022-2023, namely, media instruments: a) change in the semantic aspect of the language with the negative connotations for describing bad authorities of Ukraine and good Ukrainian people via movies, TV-shows, political talk-shows, topical news on TV, producing fake events and objects in mass media; b) organizing protest actions on the Ukrainian territory aimed at destabilizing the political situation in Ukraine.

Among frequently used propaganda tools are the following: a) interviews and political talk-shows with well-known experts and media people, journalists, modern military professionals, and military strategists; b) one-sided interpretation of any event on Russian TV; c) legitimization of Russia’s military actions for the sake of saving the Ukrainian people from “bad Ukrainian power”.

**An Example in Action: Case Study No. 2**

Fake news which are disseminated in the Ukrainian variant of Cognitive Warfare by Russian propaganda widely use the technology that allows social networks make use of the so-called “bots”. It works repeatedly by using key words and phrases, by non-existent users, until it becomes a dogma. As it was in the case of a manipulated reality with the Ukrainian city Zaporizhzhia in 2022 where a nuclear plant is located. As Alexander Kirk told: “A few days ago, the Ukrainian government announced that it had ordered the shutdown of one of reactors at the Zaporizhzhia nuclear power plant in south-central Ukraine due to a Russian

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attack that damaged ancillary facilities, warning the world of the danger of a nuclear disaster in Central Europe.”

So, what was this false message aimed at? Why was it false? What kind of technology was applied? Firstly, in the given case study the emphasis is placed on the message distributed through the medium and aimed to be heard by the Western world. Secondly, it was truly false because since April 2022 Russia occupied and controlled the facilities, and the neighbouring town of Enerhodar which was under a total Russian control, as well. Thirdly, a well-known technology coined by Canadian Marshall McLuhan (1964) runs like this: “the medium is the message”. In present times, TikTok or Twitter are the best illustrative examples of how the format of the medium defines the content of the message. It always results in patterns it influences and introduces into public opinion and human affairs, as it was described above. As Alexander Kirk states “according to the ‘news’, Russia is attacking the nuclear power plant that it itself manages in order to maliciously blame Ukraine.”

An Example in Action: Case Study No. 3

When Russia announced that it had begun pulling its troops from the Ukrainian border in mid-February, 2022, just before the invasion began, the NATO Secretary General strongly denied it, grounding his conclusions on commercial satellite images.

An Example in Action : Case Study No. 4

Regarding the Russian military atrocities in Ukrainian town of Bucha and their complete refusal to admit war crimes and responsibility, Western news outlets analysed commercial satellite imagery and established that human bodies were on the streets and mass graves existed prior to the withdrawal of Russian troops.

Overall, to sum it up, the above mentioned case studies illustrate examples of cognitive attacks against the cognitive domain of Ukrainians, and vividly illustrate their goals:
1. to change and alter the understanding and interpretation of the particular situation in an individual and in a group consciousness both of Ukrainian militaries and civilians;
2. to provide fake news stories for influencing the Ukrainian public opinion, create the impression that the truth was covered, using instruments of lies, being vague by offering few details, aimed at distorting perception by the Ukrainian and international community;
3. to disseminate misinformation for the purposes of destabilizing public institutions, weaponization of public opinion and brain sciences, influencing governmental and public policy, especially regarding Ukrainian youth as a powerful potential in the future development of the Ukrainian nation.

69 Ibid.
How Ukrainian Youth Understands the New Norm of Life and Defence of the Country and Relationship to Learning under Cognitive Warfare

In this part of our article, we present the empirical results of the only descriptive statistics of self-assessment by Ukrainian youth of their awareness of the “new norm of life”, their vision of defence of Ukraine and attitude to education as a leading activity in war times. The given part of longitudinal experimental research, which is still in progress, was carried out by the team of Ukrainian psychologists and medical scientists starting from April 2022 aimed at building models for rehabilitation potential of youth affected by the long-term Russian-Ukrainian Cognitive Warfare. We consider the adoption of a new norm of life in the context of mastering the Ukrainian syndrome as a necessary component of the process of social and psychological adaptation of the individual. The learning process and the ability to adapt in new conditions to the educational process are the key predictors of youth adaptation in wartime conditions.

The very idea that some of the pre-war symptoms and behaviour patterns that could have hindered the adaptation of the respondents in the conditions of war and internal displacement have disappeared, opens prospects for further research into the resourcefulness of youth. However, we cannot ignore the emergence of new symptoms and behavioural changes, especially those that are severe and that leave young people feeling exhausted and disorganized.

Materials and methods: The “Scale of Non-clinical Assessment of Behavioural Changes and Social Functioning” (block E), developed by Vitalii Lunov were used in the study. The study was conducted from April 2022 to January 2023. 4891 youth and young scientists from 16 to 40 years old, representing 61 cities of Ukraine, took part in the research. At the level of descriptive statistics, we can determine the following key trends in the public and educational activity of young Ukrainian people.

The obtained empirical data testifies that:

32.6% of respondents claim that there are certain signs of understanding the “new norm of life”, but they do not significantly affect life and well-being.

45.0% of respondents talk about their stable understanding of the “new norm of life”.

However, 8.4% feel exhausted and disorganized in connection with the “new norm of life” that has developed under the conditions of the Russian-Ukrainian war.

40% of young people of both genders feel fear for the life and health of their loved ones.

87% have had radical changes in their life and thus feel the sense of revenge to the enemy as a special form of defence of honour and goodness.

94% have had huge changes in their life-style and well-being caused by the Cognitive Warfare conditions, namely: deaths, wounds, blackout, power outages, lack of stable connection, constant explosions, sirens, curfew alarms, negative emotions and experiences, etc.

22.4% of young people feel a strong indifference to learning and 12.6% of respondents feel exhausted and disorganized due to such academic indifference.

41.3% of respondents practically do not feel increased motivation to study, or it is absent.

19.3% confirm certain difficulties in the organization of studies online.

13.4% say that the manifestation of this characteristic is strong and 5.3% feel exhausted and disorganized due to the impossibility of having normal conditions for studying.

11.6% of respondents feel exhausted and disorganized due to the lack of flexibility in the organization of the educational process.

Thus, the results of descriptive statistics of self-assessment of Ukrainian youth have shown behavioural, functional, and psychosomatic changes experienced by Ukrainian youth, emergence of new symptoms that are severe, and make them feel exhausted and disorganized. The feeling of patriotism and necessity to defend the country (94%) is associated with the formation of high level of IT literacy to manage and operate missiles’ complexes at the battlefield. At the same time, the understanding of new norms of life by the Ukrainian youth as a powerful future generation is hindered by new behaviour patterns, models of reactions to stress, missiles’ attacks, fear, depression, explosions, sirens, curfew alarms.

Conclusion

An overview of historical western military thought on Theory of War made it possible to comprehend the essence of modern Cognitive Warfare globally and its genesis in the Ukrainian context. The stated problem is topical and of great theoretical and methodological value as cognitive processes of a person, human mind become the object of manipulation and destruction. Understanding the genesis of the Russian-Ukrainian Cognitive Warfare in the Ukrainian context provided us with new knowledge on the role and impact of social impact activities in information operations aimed at influencing public opinion. Creation and dissemination of information threats by Russian invaders in producing and translating misinformation on the Ukrainian and global community is illustrated in the current research with four case studies, in which traditional and modern media instruments and propaganda tools are revealed. Case studies helped us understand the mechanism of changes and alterations in perceiving and interpretation of the definite piece of information, by individuals and groups, which is truly a fake one. Cognitive attacks as a principal characteristic of Cognitive Warfare, as the Ukrainian experience proves, have the goal to disseminate lies or half-lies for the purposes of destabilizing public institutions, weaponization of public opinion, influencing governmental and public policy.

Understanding modern Cognitive Warfare in the global dimension one might conclude that Russian-Ukrainian Warfare has changed history and provided stability of the Euro-Atlantic Region. It has also changed the NATO philosophy of victory, which is defined more in terms of achieving the neuro-psycho-cultural advantages over the enemy rather than the geographical high ground. Therefore, against the background of the Ukrainian lessons and achievements of the organization of effective resistance to the Russian invaders, NATO has...
changed priorities for the planning and development of the NATO Armed Forces based on innovative technologies: big data, artificial intelligence, autonomous systems and quantum technologies, virtual reality environments, etc. Along with it, the warfare in Ukraine has dramatically changed the international community’s perception of stability and peace in Europe and global security. Additionally, Ukrainian lessons to learn have put the urgent, unresolved question as to how pragmatically utilize knowledge on Cognitive Warfare outcomes to prevent manipulation of international public opinion in the future, and especially of younger generation.

**Directions for Future Research**

Understanding specific nature, characteristics, evolution, and genesis of Cognitive Warfare globally and in the Ukrainian context, made it possible to reveal an increased interest of scientific and public discourse in the problem of Cognitive Warfare in Ukraine and professional identity of the soldiers of the Armed Forces of Ukraine that helped them succeed in the first three days of invasion. It reflects the urgent needs of the Ukrainian militaries of today - high professionalism and a competent scientific approach to the essence of Cognitive Warfare in order to act efficiently and effectively now, and in the future, bearing in mind the neighbouring enemy. And this means keeping the territory of the country, developing a counteroffensive, destroying the enemy, and increasing efforts. A new type of Cognitive Warfare that widely uses digital technologies requires professional, thorough tactical training of Ukrainian military specialists with the participation of NATO instructors. This concerns the training of operators and the creation of maintenance systems for missile systems (NASAMS nationally advanced anti-aircraft missile system, Patriot, S-300, etc.), which are very complex, with a sophisticated radar and command centre in addition to the launcher. Their operation requires the training of soldiers of the Armed Forces of Ukraine with formed basic and professional competencies and skills, a high level of professional identity oriented to a positive result in military-professional activities.

The understanding of the specificity of the Cognitive Warfare in Ukraine demanded a thorough look at military heredity of the greatest military thinkers in the history of mankind in order to understand the Theory and Principles of War. It made clear and transparent Clausewitz’s belief that a people fighting for its freedom and independence against the enemy would surely display a high enthusiasm for fighting, fierceness. So, the involvement of the warlike element combined with Ukrainian militaries and Territorial Defence Forces helped succeed in the very first three days of the invasion.

Therefore, the relevance of the study is determined by the fact that in modern Cognitive Warfare of high intensity, the process of Strategic Restructuring of the Armed Forces of Ukraine is vitally important for three reasons: strategic imperative; military-political imperative in order to secure effective struggle for own statehood, territorial integrity and strengthening of defence capabilities of Ukraine; and European security, which urgently need scientific approaches and further elaboration on the issues.