

National University of Public Service
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Abstract to PhD dissertation

**Analysis of information operations, with special regard to the possible
employment of influence capabilities in the missions
of the Hungarian Defence Forces**

by

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Budapest, 2016.

Formulating the scientific problem

The information explosion in the second half of the 20th century has projected considerable enhancements in the future. The transformation of industrial societies into informational societies has drawn the attention of social and military scientists. This extraordinarily fast technological development has caused revolutionary changes in the way of obtaining, generating, processing and spreading information.

The development of information technology has been indicated by the growth of the data transmission capabilities of information and communications technology (ICT) systems in the past ten years. This vast amount of digital information which contains more and more devices flows through gradually expanding networks connected by the internet. Broadband wireless technologies have made it possible to connect almost any device to the Internet, and also to connect devices to each other, thus the “Internet of Things” (IoT) has been born. The internet of things is a huge network of devices and humans in which it is possible to connect humans to humans, humans to things and things to things.

The ICT boom has also had an effect on the theory and practice of armed conflict. Studies in the field of military science in the 1990s explored the military use of new commercial ICT. Due to the ICT development the progressively expanding information environment has changed the face of warfare. Information systems have spread all across the globe providing continuous connectivity and real time information through wireless technologies. Transformation of information into a strategic resource and the possibility of its high accessibility have transferred the information environment into a battlefield where the aim is to influence the perceptions, the decisions and the enemy’s behaviour through obtaining and using information.

Informational activities are becoming more and more important part of operations. Traditional kinetic ways of warfare based on firepower and manoeuvre are not just being supplemented but are also being replaced by non-kinetic actions or procedures. The three operational factors - armed forces, space and time - are still valid; the complex and multi-layered battlefield is closely related to the civil environment, in addition, all factors are being affected by the growing information environment.

Wars of the modern era are not limited to a geographical location, but are present in the information environment due to continuous real time media broadcasts. The influential force of media is indicated by the fact that battles are not fought for just seizing and holding an area but for winning over the public. A war's outcome is often be influenced by international opinions instead of by the fight on the battlefield.

Nowadays conventional media is supplemented by social media and in many cases information flow is shifted to social media where the expansion of wireless connections has made it possible to have a continuous connection. Contrary to the traditional mediums which can only transmit huge amounts of information to the masses social media also makes it possible to spread ideas. So, passive witnesses of events may become direct actors; thus, armed conflicts lose their physical boundaries in the information space. In my opinion, the re-evaluation of this mental effect proves the fact that the cognitive dimension of war is gaining importance which aims to influence strategic decisions through gaining more public support.

Information activities are vital and more and more important for modern armies so it is necessary to enhance strategic concepts, doctrines and educational training programmes concerning this topic. In my opinion the informational dimension of modern armed conflicts and their inner connection schemes give the actuality of this study.

In my dissertation I analysed the functions of information growth in today's societies and I studied with scientific means the effects of changes in warfare in the past few decades. With my scientific work my aim is to assist in the development of information operations in the Hungarian Defence Forces, and I also attempt to make novel suggestions to implement forward-thinking procedures.

Aims of this analysis

I determined the following aims:

- Expound the working mechanism behind the growing information environment and examine its evolution in the crisis response operations of the past few decades;
- Examine the role of influence operations in the accomplishment of operational goals;
- Assess the effects of the changes in the operational environment with regards to cognitive type influence activities in the context of information operations;

- Make propositions of a practical definition both in military science and operational utilization;
- Reveal the internal links among different fields of information operations and organize them into a new structure;
- Determine the relations of the cultural background of information operations and its working mechanism.

Hypotheses of the study

- The first hypothesis of this dissertation is that during the early evolution of information operations it was technically oriented, while nowadays technical and influence side of information operations have come to a balance and according to this, the role of influence activities have become more important in the accomplishment of operational objectives; so, the cognitive dimension of the information environment has become more important.
- The second hypothesis, is that today's military operations take place in an expanding informational space which is highly connected to the civilian environment, so achieving military objectives requires a direct control of the cognitive dimension through contents of information.
- The third hypothesis of this study says that the ever complex operation environment in which information operations take place requires information superiority based on knowledge superiority; so, I propose to change the relevant definition currently in use in Hungary.
- The fourth hypothesis is that it is necessary to have a high level of coordination of information capabilities in the cognitive dimension for efficient influence activities in the changed information environment, as well as the understanding and the application of the cultural background of information operations in order to achieve the expected effects.

Methodology of the study

I have studied the relevant Hungarian and international – English language – literature. I revealed the theoretical and practical results made in Hungary in this field of study and I assessed the experiences gained in operations.

I have analysed monographies, dissertations, relevant doctrines, studies, handbooks related to this subject and put information operations into a new structure.

In addition, I have also conducted interviews with professionals and have also used my personal experience gained on missions and through my work in general.

I participated on national and international exercises during which I analysed the relationship between theory and practical implementation of information operations and I have also utilized these experiences.

Conclusions of this study

During the evolution of warfare man-to-man combat was replaced by arm-to-arm combat and nowadays, the clash of human willpower takes place on the information battlefield. The theory of information operations became known as information warfare in the middle of the 1990s and mostly for technical reasons, it was also called command and control warfare. Its main aims were establishing operational superiority based in information superiority. This correlates with the changes in military thinking of the post-Cold War era when indirect forms of interest enforcement appeared. The effort to establish information superiority in its analogy is similar to theories of symmetric, linear conflicts, which are meant to triumph over the enemy by more combatants, firepower and manoeuvring. Technological development made it easier to obtain and process information and also to integrate it into the decision making process faster than before.

After careful study of the relevant literature I concluded that at the beginning of the development of the information operations concept the technological focus was dominant. Solutions to the problems of armed conflict have been searched for, but wars are still clash of human willpower not machines in which the ultimate aim is to influence the cognitive dimension. The human dimension is still dominant in warfare.

The statement of Clausewitz that *war therefore is an act of violence to compel our opponent to fulfil our will* is still valid in the information and digital age. However, in nowadays' armed conflicts the physical battlespace is highly connected to the information environment which is characterized by the expanding cyber space. So, it is an obvious requirement to extend military influence to the information environment and to counterbalance effects coming from this environment. Today military effects based on firepower and manoeuvres are highly interrelated with the information environment and the effects generated in cyber space which is an integral part of it.

In modern armed conflict **actions taken on physical battlefields are more and more often being taken to influence the cognitive dimension.** Moreover, during the targeting procedures the consideration of non-kinetic effects increases similarly to manoeuvres and firepower, so it is indispensable to coordinate information capabilities and activities. Today's armed conflicts cover the full spectrum of the information dimension. In order to achieve the expected results, it is of great importance to determine the previously analysed physical, informational and cognitive dimensions of the information environment in order to be able to effectively influence designated individuals or groups.

The elements of information operations consist of information capabilities. The information space enables a connection between physical and cognitive dimensions regardless of the armed services. Military actions have their own informational effects; however they are not necessarily consequence of information operations. The main aim of information operations is to influence our opponent's perception in a beneficial way to us. Military deception and concealment have been present for thousands of years and their aim is to create an unreal image in our opponent's eyes. Military force demonstration and intimidation have psychological effects in order to force the enemy to make a decision in our favour. These methods are still relevant, but modern ICT systems provide us with new possibilities, but they also make us face new challenges.

In order to influence human behaviour it is necessary to have capabilities that have an effect on the information environment. According to operational experience in the past few decades, it has become crucial to have real time communication in order to establish operational cooperation and influence selected groups. To execute these activities the required capabilities are civil-military cooperation, military public affairs, psychological operations and key leader engagement.

Radio-controlled explosives have triggered the rebirth of electronic warfare and the extension and digitalization of the informational environment with cyber space has amplified the importance of cyberspace operations. According to the evolution of the examined doctrines this tendency is revealed especially by the increasing importance of influence activities.

Crisis management operations of the past few decades have proved that information superiority can only be achieved in conflicts between symmetrical, comparable opponents. Experiences of military operation in Iraq and Afghanistan have verified that the cognitive dimension has become more important. During the fight for “hearts and minds” influence activities have gained importance.

Conventional military effects are still the most widely used ways of compelling one’s will on another but these impacts are not meant to win hearts and minds. In the information era it is a precondition to military operations to carry out influence operations which are required before and after armed conflicts. In my opinion it is still necessary, in the age of information, to have a conventional, highly equipped, efficient military force with credible deterrent capability. Based upon my analysis, I also note that information is the most important “utility” tool and target of modern societies and modern armies.

Among different military scientific concepts on information, during the continuous development of information operation theses have become a coherent theoretical and practical system. During the exponential technological development of the past few decades’ immense changes occurred in the information environment. Permanent connectedness and radically shortened news cycles have a decisive effect on the perception and behaviour of individuals and groups, thus on public opinion about armed conflicts. Operational experiences and changes in the information environment have revealed that technique and technology facilitate obtaining, processing and transmitting information but the process of influencing people’s perception occur through the content of information. So it can be stated that **there is a boundary between the influence and the technical side of information operations.**

Even though, information operations are interpreted and judged in different ways, in different countries and different armed services, these variances in my opinion will lead to a better understanding of information operations. On the one hand, the categories of information operations and information capabilities are diminishing – basic, supporting and related – on the other hand, the technical and the influence dimensions have come to balance. At the level of doctrines, currently it can only be revealed in US documents, but in my view, changes will go

in this direction in other countries too. The equal representation of information operations facilitates the high level integration of coordinated effects in order to achieve strategic goals.

Consequently, the foundation of the concept which was based on command and control warfare and was only meant to be used in the combat phase of armed conflict has now been extended. Its initial goal to influence the opponent's decision making procedure was based on technological superiority which now, with the growing importance of human environment has been put to influence the cognitive dimension. So, now the main goal of information operations is not to break the enemy's moral but to win public opinion.

During the evolution of the information operations concept, information capabilities have gone through substantial changes and the integrating function of the theory has gained significance. Today, basically every information activity is part of it which, in my opinion, shows the rising importance of information operations. Complex operations are highly dependent on the information environment which, contrary to physical battlefields, cannot be fully controlled. In my opinion, in order to achieve long-term effects, it is indispensable to have a direct control on the enemy's perception, thinking and decision making in the cognitive dimension.

Recent NATO out of area operations (Iraq, the Balkans, Afghanistan) have proved that in complex crises it is not enough to win the military fight because achieving the objectives needs more than just military solutions. The battlefield has become connected to the civil environment for a simple reason: operations are carried out amongst people and the outcome of conflicts highly depends on the public support. During crises response operations victory has different substance, therefore a series of criteria based on both civil and military efforts needs to be determined.

Modern wars are fought in civil environment where military and civil actions are executed in a parallel way. So armed forces need to possess capabilities to support and meet civil demands in order to maintain the freedom of action in the civilian environment and to win the public opinion. Accurate information and situational awareness are indispensable in modern wars; however situational understanding, research on the cultural background of conflicts and examining the causes and their consequences are more and more important for the success of an operation.

Nowadays innovative opportunities provided by informational societies makes it possible to fight a new type of combat between human minds where both war and its boundaries

become hard to define. So, armed conflicts cannot be defined as wars according to the international law even if they have all the elements required to be called as wars. The blurred boundaries of wars mean the disappearance of frontiers between state, fighting parties and civilians which also results in the physical battlefield to expand to the cognitive dimension.

At the same time we are witnessing the blurring of boundaries within information operations, since theoretically anyone can transmit obtained information. This tendency can be learned in the evolution of information operations where the civilian environment and activities influencing the cognitive dimension have gained importance.

Due to the increasingly complex operational environment the integrated planning and execution of information operations, plus the procedures to make influence operations more efficient, coordination of effects regarding both information and civil environments is essential. In consequence, currently a sort of inartificial integration process is ongoing on the influence side of information operations in which psychological operations, public affairs and civil military cooperation have a key role.

Psychological operations is distinct capability but the examination of doctrines clearly demonstrates that it develops more and more important part of information operations. However, in many cases psychological operations is referred as a replacement for information operations, which is contradictory with its aim: coordinated, integrated capabilities and activities applied in synergy in order to achieve operational goals. They have an important role with regards to public opinion about military force; that's why the psychological effect of military operations has a defining factor on their acceptance. It should not be forgotten that non kinetic, psychological operations can influence the goals set for kinetic operations and vice-versa.

Similarly to public affairs it is a criterion for psychological operations to tell the truth, but it is not mandatory to tell everything at once. Circumstances based on factual information can be revealed gradually. But the so called "black PSYOPS" which is based on false or intentionally manipulated information is not compatible with NATO and US doctrines. In the past the US Army made it possible to use "black PSYOPS" in certain situations but nowadays it can only be used by Special Forces in extraordinary situations with special authorization. In my point of view, in our constantly connected world the general rule of psychological operations not to be aimed at domestic audiences is almost impossible to follow. Subsequently, the above statements carry an even bigger weight.

Contrary to what is stated above, public affairs inform the audiences by facts and show every aspect of the truth so that people can make informed decisions. But the circumstances are distorted by the clash of messages for dominating the information environment, since it is an important criterion to get into the spotlight and remain there.

The main priority of commercial media is the numbers of dead, injured and the magnitude of the damages done. Positive news can rarely and shortly be seen which is well understood and exploited by different radical groups. It can also be said that it is easier to get into the spotlight than to stay there; that is why the attention of groups disappears fast and a different message takes over its place. So, the attitude of media is decisive regarding the armed conflicts because it can establish the positive or the negative attitude of the public regarding specific groups.

Practical experiences of the past few years have shown, that civil-military cooperation has grown out of its original boundaries which have now been incorporated in the development of doctrines. So called civil-military “interactions” include every kind of activity – communication, discussion coordination – on different levels. In my opinion this way of development is very important for a comprehensive approach. Even if this conception does not have a definition accepted by every organization there is a wide agreement in the fact that it is the essence and the goal of political, military, development and humanitarian dimension of international crisis management missions.

CIMIC capability is a tool for commanders to provide relationship between armed forces and the civilian sector in order to achieve the desired outcome. In military operations it represents the civilian perspectives and know-how related to a comprehensive approach. It is an integrated part of the planning and the execution of operations and it also facilitates the full spectrum of civil-military interactions. It keeps in touch with every affected civil actor especially with the civilian population. CIMIC makes military operations possible to fit into the framework of crisis management operations in order to establish the outcome which has been agreed upon by different actors.

Similarly to the influence side of information operations, there is a sort of integration process among the technical capabilities which is obviously affected by the expansion of the electromagnetic spectrum. This process aims at establishing networks which provide permanent connectedness in order to have a continuous flow of information and to facilitate the expansion of information sharing. So, in this field the function of information operations is to have an

effect on the information flow which in practice means blocking, disturbing or modifying information.

Electronic warfare is a key component of information operations which has become a vital element of success in modern warfare with the application of effect based activities in the electromagnetic field. It is confirmed by the growth of importance of the electromagnetic spectrum as a battlefield since modern armies are increasingly connected to global information and communication systems in which a disruption can paralyze military activities. It is typical that while the need for information is growing and wireless technologies are expanding a battle for bandwidth is evolving on the battlefields. This is actually a good example for the overall nature of the electromagnetic environment which has now become highly convergent with cyber space.

IT development is not ceasing to evolve and continuous connectedness, the internet of things are not only being used for civilian but also for military purposes which is conceivable by the condition that information and data are always available. Due to the rising increase of wireless technologies covering the electromagnetic field, electronic warfare and cyber space operations have become significant capabilities. In my view these two operational capabilities and the evolving cyber electromagnetic activities will become essential in the future.

At the same time, operations planned and executed on the technical and on the influence side of information operations shall be based on the principle of complementarity. According to my view separating information operations into two sides does not mean a detachment of the two sides from one another but facilitates the understanding and the efficient coordination of different information capabilities.

Technological development, especially the expansion of wireless networks has put significant influence on the informational dimension in the informational environment into a new context. In my point of view, nowadays it is unimaginable to maintain control over the physical battlefield in the information environment without maintaining freedom of movement in cyber space which is an integral part of the information environment. Otherwise, adaptive informational superiority and the protection of one's own information systems and also the proper use of integrated cyber capabilities are vital in modern armed conflicts.

In today's armed conflicts physical battlefields are highly connected to the information environment which is characterized by the expanding cyber space providing continuous connectedness. So, it is required to expand military effects to the information environment and

it is also essential to counterbalance the incoming effects. Hungary's NATO membership goes by the acquisition of a new military culture based on an effect base approach and the conception of information operations make an important part of it.

In my opinion the Hungarian Defence Forces should modernize its military thinking, which is primarily focused on the execution of combat operations and should, in addition, concentrate on the fulfilling the desired effects to achieve this. The cognitive and informational dimensions should have special attention since this is where information effects are generated. Moreover, during targeting the importance of non-kinetic effects is growing so it is necessary to synchronize not only fires and manoeuvres but information effects too. This points to the fact that we should go beyond conventional joint force operations – sea, air, land – but should take full account of the informational environment and the cyber space.

New scientific achievements

1. I have verified that during the evolution of the early technical view of the information operation concept, today the technical and the influence sides of information operations have come to a balance; according to this the role of influence activities have become more important in the accomplishment of operational objectives so the cognitive dimension of the information environment has become more important.
2. I have proved that by the continuous connectedness and the increasing importance of warfare's human nature, it has become necessary to influence the cognitive dimension through the content of information, which makes planning and executing information operations more efficient.
3. I have proposed, based on my research, new definition of the information environment and the information operations, which facilitates the military science comprehension of information operations and its successful use in military operations.

4. I have organized influence activities of information operations into a system and I have summarized relations between the cultural background of information operations, which results in a higher operational efficiency in the information space and the civil environment of the operational area.

Proposals

The research during the work on this thesis has proved that information operations have become an indispensable part of modern armed conflicts. The Hungarian Defence Forces have to be able to manage effects directed at, and coming from, both information and civilian environments in order to defend Hungary as well as to support a competent contribution to NATO and EU missions.

The fact that information capabilities can be efficiently used in crisis which does not reach a specific threshold of intensity makes it a key element of the transformed operational environment. Moreover, information operations are carried out in the full spectrum of conflicts from the beginning of crises until the stated objectives accomplished; that is how information operations enhance to achieve operational goals.

Efficient development of information capabilities necessitates the reassessment of the theoretical basis of military thinking which can be assisted by the connections I have explained. The re-evaluation I have made shows the ongoing changes in the informational environment and their effects on today's armed conflicts as well as in the aspect of information operations.

The findings of this thesis contribute to the application of information operations capabilities by the Hungarian Defence Forces in both defending the homeland and contributing to NATO and EU operations; it also enhances the cooperation between information capabilities. In my opinion, the conclusions drawn from the transformation of the information environment facilitate the establishment of a fully complex strategic framework.

In my judgment, the Hungarian Defence Forces should attempt to establish a better control on the effects coming from the information environment and should also have an efficient and proactive control on the challenges posed by cyber space. Influence operations make an integrated part of today's operations; that is why it is necessary to establish a new concept of information operations and to represent it on different levels of command and

control. Every element should be developed according to the working mechanism and aspects of information operations.

A coherent concept, a doctrinal background, the development and the integrated use of information capabilities, as well as proper training and preparation are necessary for the efficient execution of information operations. This analysis contributes to every level of command and control, to the elaboration of operational plans, as well as to the planning and execution of the integrated use of information capabilities.

The findings of this study can be used to prepare commanders and their staffs, on training events in Hungary and abroad, as well as for mission preparations. In my opinion the primary necessity is to broaden the knowledge of commanders and their staffs regarding this subject. I believe that it is imperative to train for information operations in a modern way so, therefore, my conclusions can be used in educational materials for officer cadets.

Since Hungary is a member of NATO and it is facing new types of challenges and risks, the function of information operations in contributing to modern deterrence and defence should, it is proposed, be researched further.

Summary of publications regarding the subject

Rózsa Tibor: Információs műveletek a Magyar Honvédség missziós feladataiban, Hadtudomány XXI. évf. 1-2. szám (2011. május) pp. 42-48.

Rózsa Tibor: NATO kapcsolatok és feladatok Szarajevóban, Hadtudományi Szemle 6. évf. 1. szám (2013) pp. 21-26.

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Rózsa Tibor: Hálózatközpontú és hatásalapú műveletek a Szövetségben, Sereg Szemle különszám, (2012. július) pp. 65-72.

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Rózsa, Tibor: NATO Information Operations in Afghanistan, AARMS Volume 12. Issue 1. (2013.) pp. 166-164.

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Curriculum Vitae

PERSONAL INFORMATION

Family name: Rózsa

First name: Tibor

Date of Birth: 22 October 1967.

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EDUCATION

1986 – 1989: Military College, Long Range Reconnaissance Officer

1998 – 2000: Military University, Expert in Security and Defense Policy

2006 – 2008: Corvinus University, Institute for Post-graduate Studies in Economics,
Expert in lobbying

2009 – 2010: Senior Course, NATO Defence College, Rome

PREVIOUS ASSIGNMENTS

1990 – 1994: Sub-Unit Commander and Staff Officer, Special Reconnaissance Battalion

1994 – 1996: Training Officer, Peacekeeping Forces Training Centre

1996 – 1998: Aide de Camp to the Chief of Defense Staff

1998 – 2000: Post-graduate Studies, National Defense University

2000 – 2003: Deputy Head of Secretariat, Ministry of Defense

2003 – 2007: Commander, CIMIC & PSYOPS Centre

2007 – 2013: Branch Chief, J9 Branch, Joint Forces Command HQ

2013 – : Deputy Military Representative to NATO Military Committee, Brussels

MISSION EXPERIENCE

2007. August – 2008. March: HUN PRT Commander, Afghanistan

2011. November – 2012. June: Chief of Staff, NATO HQ Sarajevo, Bosnia-Herzegovina

PROFESSIONAL QUALIFICATIONS

1992: Infantry Officers Basic Course at Fort Benning, USA

2004 – 2007: CIMIC, PSYOPS, INFOOPS, ESDP and ISAF PRT Course at NATO School in Oberammergau, Germany

2010: Senior NATO INFOOPS Course, NATO School, Oberammergau

RANK

Promoted to colonel on January 1st 2007.