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STRATEGOS

"Hybrid war(fare)" in the digital media under the national domain of the Republic of Croatia: a systematic review

Hrvoje Karna, Darija Jurko, Boško Jerončić-Grba

Abstract

Systematic reviews synthesize data from primary sources and offer a different form of insight into the problem. In this regard, the review presented provides results of a detailed analysis of digital media contents, available in national domain of the Republic of Croatia, that used the terms "hybrid war(fare)" – often a label of contemporary wars. It was undertaken in the early 2020 and considers the total of 360 individual contents identified using Google tools. Results provide information regarding the sources, frequencies as well as typical cases and types of information in which the terms appeared. Initially used for the right purpose use of these terms peaked by the end of 2017 when they became a sort of a buzzword that began to be abused. Therefore finally, the authors propose possible measures to efficiently counteract this problem likewise hoping that this evidence-based analysis contributed to the body of knowledge in the field.

Keywords

Analysis, Digital Media, Hybrid war(fare), Republic of Croatia, Systematic Review

1 Članak je primljen u Uredništvo 31. ožujka 2020. i prihvaćen za objavu 6. prosinca 2020. (The article was received by the Editorial Board on March 31, 2020 and accepted for publication on December 6, 2020.)
The labels *term* and *concept* will be used interchangeably in the context of the terms under consideration thought the paper.

Introduction

By then, to the general public, mostly unknown terms "hibridni rat" and "hibridno ratovanje"[2] spread through the Croatian media space by the end of 2017. Although these terms have existed globally for a longer time (Andersson and Tardy, 2015) and were not completely unknown to the public, as they have already been used sporadically (Marović, 2019), the wider audience in Croatia was confronted with their pervasive use only then. Interestingly, after a relatively short period of intense presence in the media, the use of the terms has almost ceased in similar way as it appeared.

In order to gain a clearer understanding of the reasons that led to this phenomenon, the context of the situation at that time, and events that triggered this trend, it is interesting to look at both narrower and broader frame that certainly contributed to such developments. During observed time in Croatia, its closer environment and beyond were marked by number of on-going processes, each in its own stage of evolvement and associated intensity. Since a comprehensive listing of these processes is not the subject of this paper, as they here merely serve to give a notion of the circumstances present at that time that were relevant to the Croatian context, at this place we name some of the most important from the authors point of view:

- domestic: the Homeland War, Croatia's membership and position within Euro-Atlantic integrations, crisis in the Agrokor group[3], changes in the ruling coalition, etc.
- surrounding: permanent efforts of the EU aimed at further stabilization of the Balkan region, a continuous pursuit of integration of new members into Euro-Atlantic associations, Russian activity in South East Europe, ongoing disputes with neighbouring countries, the mutual interference in the internal political themes of neighbours, etc.

2 Equivalents of these terms in English language are "hybrid war" and "hybrid warfare". In the rest of the paper they will be, at places where it is considered approapriate, abbreviated in a form „hybrid war(fare)".

3 Agrokor was a conglomerate, largely centered in agribusiness, with headquarters in Zagreb, Croatia.

- broader: the apparent calming of the situation in Ukraine, the ongoing conflict in Syria, European migrant crisis, shift of administration in Washington, strengthening of the EU foreign, security and defence policy, etc.

According to the author's judgment, the aforementioned and other factors formed preconditions that led to the later introduction of the concepts discussed in Croatian media space. In doing so, they did not necessarily directly influence the internal situation but rather led to the creation of an atmosphere in which the use of the above concepts seemed appropriate and soon intensified, which at a given moment resulted in its adoption into the domestic vocabulary.

At once popular and apparently suitable for use to those who have incorporated them into their own vocabulary, these terms have been misused in number of cases with a purpose we can only speculate on. While they were mostly used correctly by the representatives, especially in the initial phase after adoption, in certain cases part of them and the media handled them inappropriately. This was demonstrated also by the results of the analysis that are presented in this paper. Furthermore, posts from the analysed period indicate that these terms were sometimes used by the authors of the media inscriptions even in cases when the original authors whose statements were transmitted did not use them at all, or at least not exactly in that form. Practically, this has led to the frequent general abuse of the terms which are essentially problematic because they necessarily evoke, at least to the general public, primarily negative connotations. In doing so, everyone at that time had to be aware that this could (and probably did) cause a myriad of negative side effects.

Defining Hybrid war(fare)

In order to understand the broader context under discussion, at the beginning it is necessary to clearly define the terms whose occurrence and use are an integral part of the analysis that was conducted. However, already here a potential researcher encounters a problem because the terms "hybrid war" and "hybrid warfare" are not unambiguously defined (Hoffman, 2009;

Caliskan and Cramers, 2018). This should come as no surprise given its root term or concept – the "war" itself is not uniquely defined. In its narrow sense the war is understood as an armed conflict between two or more parties (typically the states or nations) that officially declared war on each other (Kende, 1971), and this type of relationship in the modern era is becoming increasingly rare (Hoffman, 2007). Nevertheless, this term is still used to characterize various conflicts.

Listed below are some of definitions of the terms "hybrid war(fare)" used by the relevant sources:

"*New concept (that calls) for greatly expanded roles and missions for … forces to support the political, informational and economic projections of national power, in addition to conventional military force, to achieve political objectives.*" (Bond, 2007)

"*We have defined hybrid warfare as conflict involving a combination of conventional military forces and irregular (guerrillas, insurgents, and terrorists), which could include both state and non-state actors, aimed at achieving a common political purpose.*" (Murray and Mansoor, 2012)

"*Despite the lack of a unified definition, 'hybrid warfare' can be characterized as a form of warfare, which comprises a mix of methods – conventional and unconventional, military and non-military, over and covert actions involving cyber and information warfare 'aimed at creating confusion and ambiguity on the nature, the origin and the objective of these actions'.*" (NATO StratCom, 2016)

Basically, a layman confronted with the definitions listed above or similar will easily find themselves in confusion. For sure, the important message received is that we are dealing with something that is heterogeneous in its nature (a "hybrid"), that it is a conflict of an indefinite scale (as there is no clear explanation when the "conflict"[4] escalates into what we commonly call

4 The *conflict* is typically defined as a competitive or opposing action, mental struggle or the opposition of persons and forces and only then (in an archaic sense) in the context of warfare, as defined by https://www.merriam-webster.com/dictionary/conflict

a "war"[5]) but definitely of a hostile nature, which could potentially pose a severe threat to general security.

Additional problems arise from the following facts: a) different relevant sources use different definitions; b) other various elements, typically complex by themselves and not completely unambiguous, are included in the definitions, and c) some of the definitions contradict other. The first statement is obvious from the definitions provided above. Next, the concepts like "projections of power", "irregular forces" or "cyber and/or information warfare" already represent an amalgam of possible modes of action. And finally, from the information provided, it is unclear whether these necessarily involve both components, as the keyword "and" suggests (the conventional and unconventional, military and non-military, regular and irregular etc.), or in order to define it as such it is sufficient to have only one of the above mentioned components.

This is important so that it is possible to clearly distinguish when we are dealing with the threat[6], conflict or some other type of event, and when it has evolved into what is standardly defined as war(fare).

Evolution of this type of war(fare)

The war has accompanied humanity since its earliest days. It is a manifestation of power in its brutal form. Although commonly associated with use of the armed forces and their kinetic modes of action, modern forms of conflict are diverse and do not necessarily take on these patterns. In the war, the modes of the applied force will depend on the goals that aimed to be achieved and the effects it seeks to produce. Therefore, in line with the development of

5 The *war* and *warfare* are defined as a states of open and declared armed hostile conflicts between states or nations, and hence typically imply a form of a military operations between enemies undertaken to weaken or destroy another, as defined by https://www.merriam-webster.com/dictionary/war|warfare

6 In literature the concept "hybrid threat" is sometimes used interchangeably with concepts "hybrid war(fare)". This paper assumes that a hybrid threat is the threat that hybrid warfare will be waged by an adversary to another entity, as defined by (Tienhoven, 2016).

human society, modes of war(fare) have evolved as well. They changed from the traditional wars of states and nations to conflicts in which groups and alliances of various kinds, types and scales, joined by particular and common interests or ideas aim to realize their own interests.

However, modifying itself through time according to changing circumstances, in its essence the war(fare) did not change at all. It has always, and so does today, blended "*the violence and hatred, chance and probability and political considerations - elements that play out in the interaction of people, military forces, and governments*" as Clausewitz realized and noted long ago in his famous work On War (von Clausewitz, 2006). These can be seen as elements of war, which over time have only been altered and intertwined to take on the form of what we today call the modern war (Glenn, 2009).

Modern war is more than military operation, as it, above all, enlists every aspect of life (Townshend, 2000). The power and sophistication of weapons have increased through technological advancement. Alongside them, tactics and strategies evolved as well, and thus the "war" has become an ever growing threat to humanity. The question that is much more difficult to answer is whether the consciousness of individuals and society overall developed at least at an approximate rate. So, as the boundaries of private and public, national and global as well as the real and virtual faded, various new forms of warfare have developed penetrating into previously elusive spaces. Rapid development of information and communication technology over the past decades significantly changed the war landscape, opening new domains that changed those existing.

What is referred to as cyberspace is enabled and rests on information and communication infrastructure. Although there are isolated parts within it, on a general level it is increasingly interconnected in ways that cross geographical boundaries. This fact provides numerous benefits in terms of ease and speed of communication and other activities but it also raises a number of issues, foremost security ones. Considering that cyberspace operates on levels including that social (Morton, 2010), it has become an excellent platform for projecting a so-called "soft power" (Armitage and Nye, 2007), in time of universal connectivity. By operating through diplomatic,

economic, intelligence and other channels it is possible to achieve measurable objectives, if not greater than, those achieved by "hard" methods of coercion. A key platform and the one that enables action towards a broad audience is definitely the media. The media have always been a convenient mean of conducting information campaigns of every kind, those digital even more so.

Termed either "information operations", the evermore popular "strategic communications", by "a great word with an awful reputation – propaganda" or otherwise, which are by no means synonyms, they have always relied on the media as a means of delivering the messages, with the intent of having an effect – whether tactical, operational or strategic – on targeted audience (Ingram, 2016). Within this, the practice of binding of specific terms to certain types of messages by different actors is a known communication technique. The campaign is more likely to be successful if it is synchronized as that way it produces the cumulative effects.

Depending on who initiates it and for what purpose, the information campaigns may not necessarily have negative intentions. They can as well be aimed at informing the public about some important developments, thereby raising general awareness, for the purpose of protecting them. But it can also push the attitudes of majority towards undesirable directions, raise tensions, mislead or else. Irresponsible or hostile coverage by the media can violate even the most meaningful actions, in a way that the messages of those responsible that try to manage the situation become unrecognizable in the deafening flood of information. In these situations it becomes more difficult to distinguish the true information from fake, the essential from irrelevant, or even to take the right attitude towards a particular topic. In this way hostile actions achieve their purpose. Thus, the media can potentially become a platform for conducting hybrid activities.

Notion of the general perception of the terms in Croatia

Domestic scientific community has addressed the topic of hybrid war(fare) in various ways, this is confirmed by the works of several authors (Lesinger, 2017, Brzica, 2018, Ivanjek, 2018). On the other hand there is no formal research available on the perception of these terms in the Republic of Croatia, at least according to the current authors' knowledge. Among other things, this is an indicator how this important issue has been treated. At least the academic community is aware of what this phenomenon is about, but it seems, that for some reason they did not investigate how it had reflected in the general public. This could serve as a guideline for some further research on this topic, as from the academic standpoint it is absolutely necessary to address this question as well.

What we are left with at the moment, or perhaps it is better to say what is available and deals with the issue, is a short article and an associated video of the *ad-hoc* survey conducted on the streets of Croatian capital Zagreb and provided on the site of one domestic portal[7]. The authors of a survey asked random passers-by a simple question: "*Have you heard of hybrid war and do you know what it is?*". Bellow, we quote some of the answers in the order of their appearance:

- interviewee #1 (lady): "*No.*"
- interviewee #2 (young gentleman): "*Nope.*"
- interviewees #3 (group of girls): "*We did not. What did you say …?*"
- interviewee #4 (lady): "*No.*"
- interviewee #5 (lady): "*I have not. I haven't heard of it.*"
- interviewee #6 (young gentleman): "*Well no. I mean I don't know what it is. The public is not familiar … It is some story between them. They are at war (simulates quotation marks) and we know nothing.*"
- interviewee #7 (lady): "*I have heard but I don't know what that means because I have not heard (from anyone) an explanation of this term.*"

7 VIDEO: DO YOU KNOW WHAT A HYBRID WAR IS? "*I've heard of hybrid corn, and this is something politicians have invented. Just so there are no hybrid women ... "*, Available at: https://100posto.jutarnji.hr/news/ne-bojim-se-hibridnog-rata-ni-hibridne-hrane-samo-da-ne-bude-hibridnih-zena [Accessed March 05, 2020]

- interviewee #8 (gentleman) "*Yes, yes. Well, it's easy to hide behind some formulations. Beyond that, it can be anything. But I'm not very impressed. It is used by politicians to impress people. It should be taken with 'caution'.*"
- interviewee #8 (lady): "*That's … What is his name … Todorić complained that everyone conspired against him. Everyone is arguing, SDP, HDZ, whoever … I have no idea: who, why, how, … That's it.*"
- interviewee #9 (gentleman): "*Hybrid war, I know. Yes, yes. Computers … propaganda … against the state. They quarrel in parties and like that. That's it. Giving false information.*"

Based on the answers provided in the interview, considering that it is still an unrepresentative sample of respondents, one can already get the impression that the wider audience: a) for the most part have not heard of the terms "hybrid war(fare)", b) that they are completely unaware of their exact meaning and/or c) they cannot define the terms clearly enough to be able to reliably judge events related to them. Also, it is apparent that part of the public that was able to recognize the terms is not satisfied with the fact that though heard it i.e. it was used, they were never informed about their exact meaning. Finally, it is evident that some respondents associate the terms with political and economic developments at that moment.

The author's assumption is that, this perception is at least partially the result of the ways in which the representatives communicated publicly on a range of topics, and sometimes needlessly used these terms. On the other hand it is obvious, as it can be deduced from the analysis of the available contents, that the digital media were the ones that quickly adopted the terms and started to use them in numerous cases uncritically. This way the terms "hybrid war" and "hybrid warfare" became a kind of buzzwords, similar to how this happened elsewhere (Tienhoven, 2016). As it turned out, they were used even in situations when in reality, original content that was transmitted did not mention them, or in reality, other similar terms were used and were afterwards replaced at various places with then popular "hybrid war(fare)". This caused multiple side effects, and as it is evident from the analysis, one of the most dangerous was the general public confusion.

Terms "Hybrid war(fare)" in Croatian digital media

This section presents the details of a systematic review that has been performed as a part of the research. The research approach followed strict guidelines for conducting analysis of this type. Review protocol applied a content search and extraction pattern, using a popular online search engine that was conducted within the national domain of the Republic of Croatia. In this way authors were able to identify, collect and process the content that provides examples in which the term was used. The review has attempted to collect all available digital media contents within the designated domain that included the terms "hibridni rat" and "hibridno ratovanje". Therefore it covers the timeframe defined by the time the collecting took place and backwards to the earliest published material found. In addition, the analysis provides the information regarding the sources, frequencies as well as the typical cases in which the terms appeared in the media and other.

Review Protocol

Systematic reviews are performed for the purpose of synthesizing the data from the primary data sources. They are aimed at providing a detailed insight into the state of the topic being analysed. Unlike traditional reviews which typically apply informal methods in order to provide summaries of evidence on a given topic, systematic reviews are conducted in accordance with sound guidelines. This kind of analysis therefore implies a comprehensive search of primary sources related with the topics being analysed, their selection using clear and reproducible criteria and synthesis of results based on a clearly defined goals.

Steps used to conduct systematic review of this kind can be summarized as follows: 1. defining the purpose for conducting the review, 2. establishing strict rules for its implementation, 3. exhaustive search for data sources and their identification, 4. extraction and storing of the data, 5. inspection and alignment of the data, 6. analyses, enrichment and synthesis of the results, and finally their 7. interpretation and reporting of the review results. In case of multiple terms and/or reviewers steps 3-5 are repeated. The protocol used

to conduct this systematic review can therefore be summarized as shown in Figure 1.

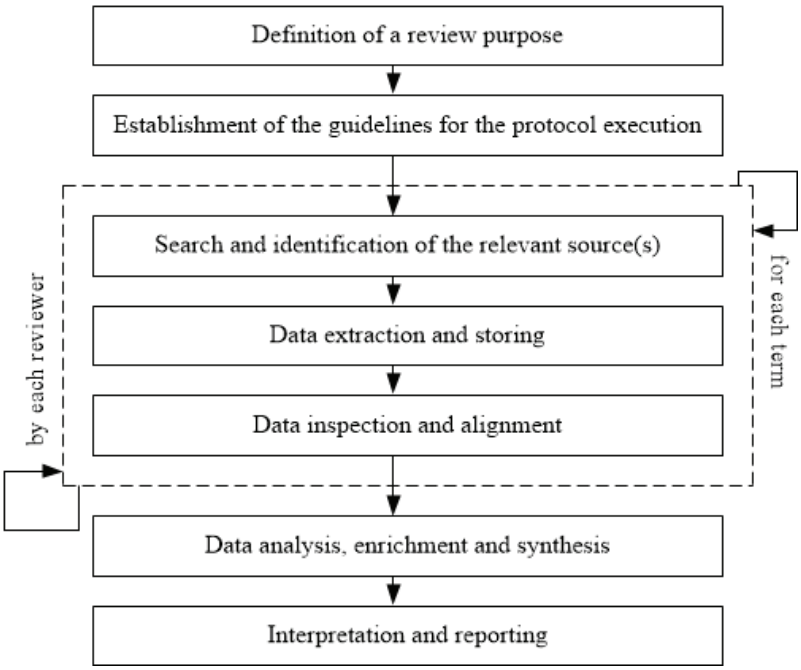

Figure 1. Systematic review protocol

Method and tools

Assuming that majority of the media content today is provided and disseminated in digital format, that resides on the servers remaining mostly and is therefore permanently available to the users either directly (on web portals) or indirectly (via search engines) online, the method used to collect the data for the review was the following.

Initially, it aimed at identifying the interest of general population for the content that includes terms of "hybrid war" and "hybrid warfare"[8] – for this

8 For the purpose of the study at this point both terms in english i.e. „hybrid war" and „hybrid warfare" (for the world wide scope) and their Croatian equivalents i.e. „hibridni rat" and „hibridno ratovanje" (for the scope of Croatia) were considered.

purpose Google Trends tool was used. It allowed analyses of search queries for all categories, across whole world and specifically for the Croatian region, within the period Jan. 01, 2004 – Mar. 23, 2020. The end date is when the data was collected, while the initial date is the maximum possible backword shift supported by the service. This way it was possible to acquire and compare the specified search magnitudes.

Thereafter, the goal was to identify actual digital contents that included the terms[9] considered and that was published within national domain of the Republic of Croatia (.hr) and to collect associated metadata. This was performed using the Google Search engine. In order to restrict the search to .hr domain and the contents containing exactly the terms of interests (avoiding other combinations) search queries were structured in the following format: site:.hr "hibridni rat" / site:.hr "hibridno ratovanje". The reasons for using this form of query structuring are evident from the variations of the search results that are presented in the Table 1.

Table 1. Search result in numbers

Query[1]	References[2]	
hibridni rat | hibridno ratovanje	433	109
"hibridni rat" | "hibridno ratovanje"	394	99
site:.hr "hibridni rat" | site:.hr "hibridno ratovanje"	287[3]	292[3]
	175[4]	185[4]

[1] Term entered in search form; [2] Number of links (URLs);

[3] After including omitted search results; [4] Duplicates removed

Discussion about the specifics of how Google Search works is not the subject of this paper. However, it is worth noting that it is the most popular web search engine that dominates the market in all counties and on any device (desktop, mobile and tablets). The reason is that Google uses sophisticated algorithms to deliver accurate and trusted search results to the users. Further

9 At this point exlucively terms in Croatian language were considered i.e. „hibridni rat" and „hibridno ratovanje", as the review at this phase focused on identifying the contents posted and written in .hr domain.

on, the important idea behind its implementation is that websites referenced by other websites deserve higher ranking in search results. The above was an argument that led the authors to select the specified tools and services for the purpose of conducting the research. The content collected and analysed this way is relevant and provides a quality insight into the matter being investigated.

The last concern, before going into detailed analysis of the digital media content, was to collect the metadata related to the contents. Given that we have previously formed queries and obtained the search results (175 for "hibridni rat" and 185 for "hibridno ratovanje"), the prerequisite for any further analyses was to collect URLs that locate the contents. Dealing with a relatively large amount number of results, instead of manual collection, authors took advantage of SEOquake10 plugin capability. This plugin is highly customizable that loads into the Google Chrome browser and allows export of various webpage's parameters.

For the purpose of this study we used SEOquake just to collect the paths to the content more efficiently, while we left other options aside for some further research. Once this was done, a step further has been taken to collect relevant information for this research such as the names of sites where the content was hosted, time when it was published and so on. An important step was also to associate the posts, based on the preview of the content, to the categories defined for the purpose of this research. Details regarding this will be discussed in more details in the upcoming sections.

Identifying Search Trends

As noted earlier, for the purpose of the study the Google Trends service was used to gain the insight into the search interest of the users for the analysed terms, during the specified time period and over different geographical regions. This service provides information about the popularity of the search queries in Google Search across regions and languages. The data is presented in forms of graphs that compare the search volumes of different

10 More details available at: https://www.seoquake.com/welcome/index.html#welcome

queries over time. While interpreting the data, one should keep in mind that these numbers represent the search interest relative to the highest point on the chart. This means that a value of "100" on the graph represents a moment of peak popularity of the term, value of "50" half the popularity and value of "0" indicates no data. Hence, this service does not provide the exact quantities i.e. we don't know how many queries there were, how many results the users received as we don't know which results they got – only the dynamics of interest over the time.

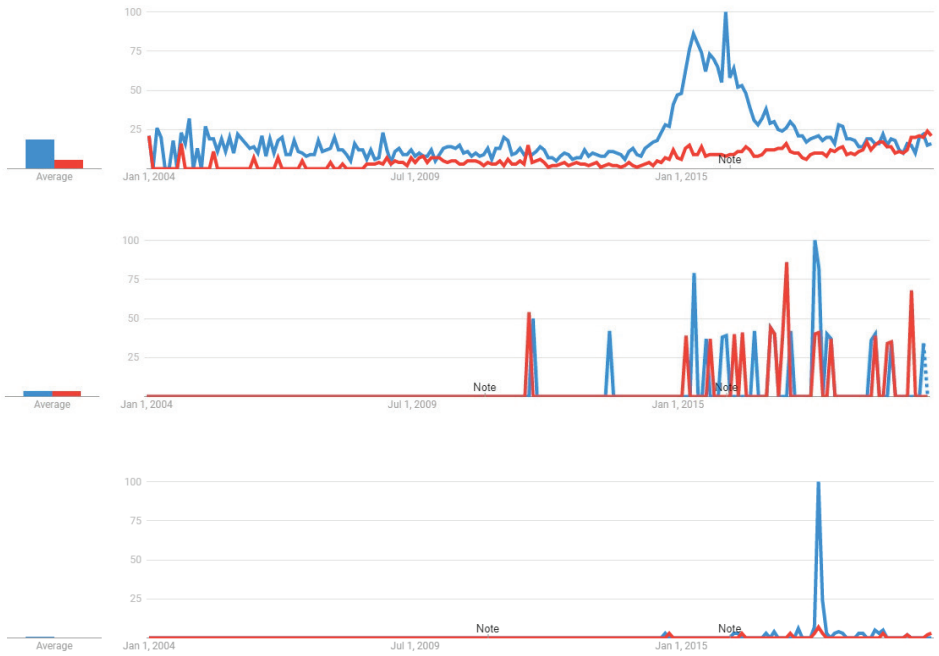

Figure 2.The search trends provided by Google Trends (from top to bottom):
a) "hybrid war (blue line)/hybrid warfare (red line)" (Worldwide);
b) "hybrid war(blue line)/hybrid warfare (red line)" (Croatia);
c) "hibridni rat (blue line)/hibridno ratovanje (red line)" (Croatia).

Search trends reveal that interest for the aforementioned terms appeared in Croatia much later then globally. While trends show a continuous and then upwards trend on a worldwide scale, these terms and associated contents

were seldom searched in Croatia. Then, from the 2015 onwards, such queries for English terms are recorded. In contrast, their equivalents in Croatian language are hardly searched for at all. However, by the end of 2017 the explosion of search interest for these terms was recorded.

All this points to the fact that analysed terms have been unknown to the domestic public for a long time and then, due to certain developments, were imported into the public space and maintained for a certain time becoming a widely used buzzword.

A closer look at the acquired data provides us the information about the average search interest for the analysed terms over the period that the review is considering. Additionally, on the timeline it is possible to determine the dates and the indication of the magnitude of the associated interest. This is summarized in the results presented in Table 2.

Table 2. Summary result for analysed search trends

Term	GeoLocation	Search interest	
		Average for the period[1]	Highest / on the Date
hybrid war	Worldwide	19	100 / Dec. 2015
hybrid warfare	Worldwide	6	24 / Feb. 2020
hybrid war	Croatia	4	100 / Nov. 2017
hybrid warfare	Croatia	4	86 / Apr. 2017
hibridni rat	Croatia	1	100 / Nov 2017
hibridno ratovanje	Croatia	N/A[2]	7 / Nov 2017

[1] Period the review is considering refers to is Jan. 01, 2004 – Mar. 23, 2020; [2] information not available

Analyses of the Digital Media Content

This section summarizes the results of the analyses carried out on the collected data. The following indicators were considered: the *timeline* – provides insight into the amount of content published in relation to time; *sites* – lists the sites that hosted the contents, ranked descending based on the

amount of content; *case* – presents data about the association of individual content to a particular context; *conflict* – specifies the type of conflict involved and the *infotype* – classifies the type of information the content primarily belongs to. Details follow in the relevant sections bellow; note that the analysis provides results for the content associated with search results of both terms considered in the review.

Timeline. The timeline presents the quantity for the identified contents relative to the period the review is considering. It provides an indication of the amount of publicly available content disposed across platforms. This is provided in Figure 3.

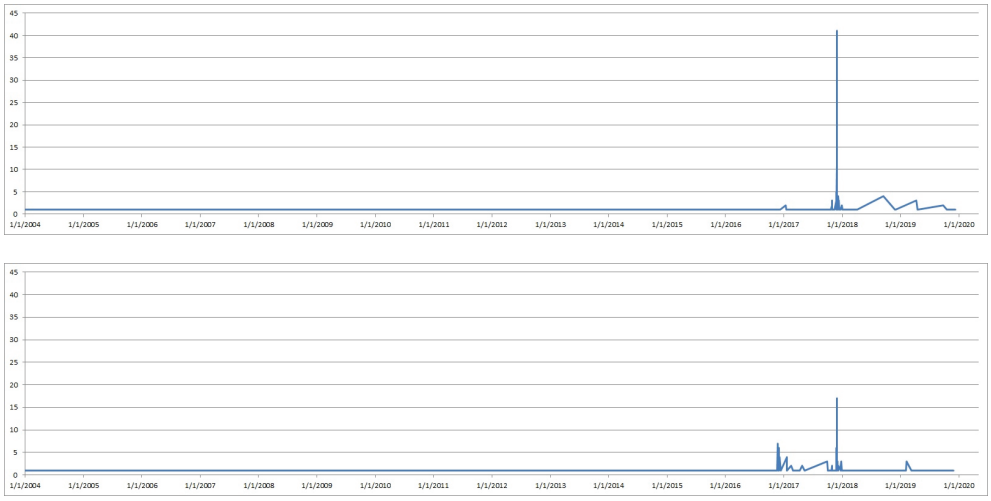

Figure 3.The timeline for both
a) "hibridni rat" (top) and b) "hibridno ratovanje" (bottom)

Comparing these graphs with those generating by Google Trends (Figure 2 c) it is evident that the amount of published content in the observed time generally follows the curve of recorded interest present in Croatia at that time. In case of Google Trends that interest was recorded in a form of the intensity of search trend for the content under consideration.

Sites. This parameter identifies the sites i.e. portals that hosted the identified content. After inspection of the collected records a total of 46 portals were

identified maintaining the posts containing the terms "hibridni rat", in comparison with 63 portals that hosted the contents associated with the term "hibridno ratovanje". Representation of the distribution of the contents on corresponding sites is available in Figure 4.

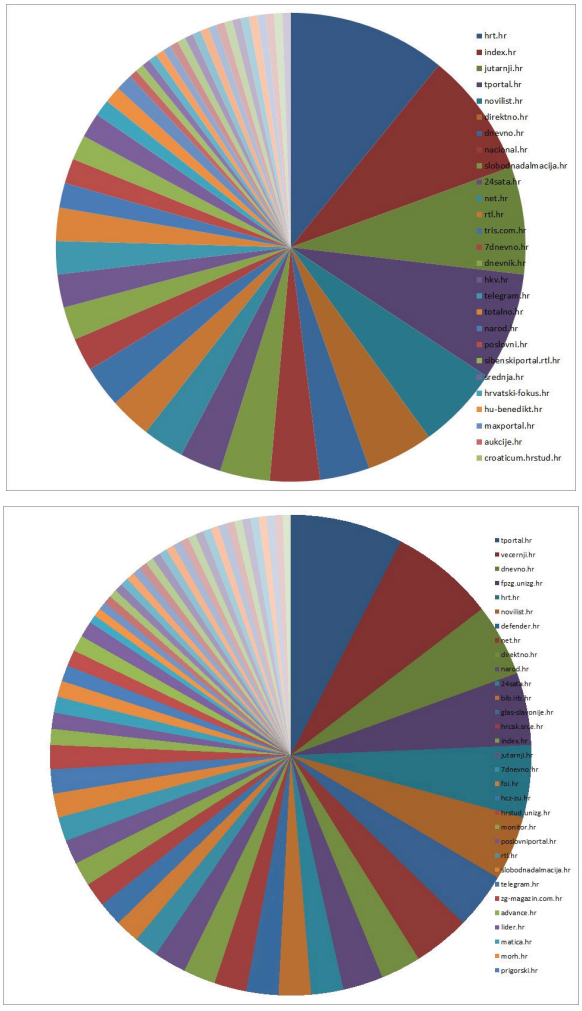

Figure 4. The distribution of sites hosting the contents:
a) "hibridni rat" (top) and b) "hibridno ratovanje" (bottom)

At this moment it is not our intention to provide the complete lists of portals, but to note their absolute numbers. What is worth noting is the distribution of content across portals and in this regard their rating with respect to number of published titles that contained analysed terms. Related to this we list the top five portals based on the incidence of both terms: "hibridni rat" – hrt.hr (19); index.hr (15); jutarnji.hr, tportal.hr (13); novilist.hr (10), direktno.hr (8) and for "hibridno ratovanje" – tportal.hr (14); vecernji.hr (13); dnevno.hr, fpzg.unizg.hr, hrt.hr (9); novilist.hr (8); defender.hr, net.hr (7).

It is evident from the lists that the sites involved mainly belonged to the group of news portals, which is in line with the expectations. In both cases, the state news service is highly ranked but it is closely followed by privately owned portals. Also, it is interesting to note that among the group of sites hosting the contents that included the term "hibridno ratovanje", the web portal of the Faculty of Political Sciences of the University of Zagreb was highly ranked. This is a clear indication that these topics were not exclusively addressed by news providers but academic community was also actively involved.

Cases. This classification reveals the *cases* that the analysed content indicated in context of the terms "hibridni rat" and "hibridno ratovanje". The cases were designed and the individual contents associated with them, after a process of their detailed review. They act as a kind of containers of a similar content. This procedure was carried out in three steps: the first step included an initial review of the entire content, the second included detection of the contents that dealt with similar topics. At this place, in order to associate them, the so called "cases" were formed. During the last step, the individual content was assigned to a particular case. Tables 3 and 4 provide lists of the top *cases* and the number of related contents for both terms.

Table 3. Top cases and number of associated contents for "hibridni rat"

Case	[n]	Case	[n]
General	76	RU > UA	2
N/A[1]	19	SSB[3] > HR	2
Agrokor	16	SMS	2
Other[2]	11	ME > HR	1
Multiple	9	PL <> RU	1
Diploma	7	RU > EU	1
RU > DE	4	RU > BA	1
BA > HR	3	RU > US	1
RU > West	3	RU > ME	1
? > ME	2	RU and ISIS > EU	1
RS > BA	2	…	
RU > Balkan	2		

[1] not applicable; [2] meaningless use of the term; [3] SSB = SI, RS and BA
** Two-letter country codes designate countries by using ISO 3166-1 alpha-2 standard*

A significant number of cases belong to the "General" group. These are the contents that use the terms but never refer to any particular entity from which one could determine to whom the activity was directed. This category includes numerous inscriptions that discuss the terms themselves and the meaning behind them. The next two most numerous cases were "N/A", the one that contains contents that could not be classified, and case "Multiple" as a form of a case that included the contents which could be categorized into multiple categories. So it was decided to create a unique one.

Table 4. Top cases and number of associated contents for "hibridno ratovanje"

Case	[n]	Case	[n]
General	95	Free Media	1
N/A[1]	39	HR and US > BA	1
Multiple	17	Referendum	1
Other[2]	4	RU > ChUAW[4]	1
Hague	2	RU > NATO	1
Parliament	2	RU > PL	1
RU > BA	2	RU > RO	1
RU > EU and NATO	2	RU > UA and fEb[4]	1
SSB[3] > HR	2	RU > US	1
Budapest	2	RU > West	1
Assets	1	RS > HR	1
East Neighbours > RH	1	…	

[1] not applicable; [2] meaningless use of the term; [3] SSB = SI, RS and BA; [4] ChUAW = Chechenia, Ukraine and the West; [4] fEb = former East bloc countries
** Two-letter country codes designate countries by using ISO 3166-1 alpha-2 standard*

Cases were in certain situations named after the topic they are dealing with (typical representative is "Agrokor" case) and more often in a form of a compound tags that indicate the relationship of the hybrid war(fare) activity of one or more states or organizations towards another (here instead of full names abbreviations were used). This relation marker ">" indicating the direction of hybrid activity is mostly unidirectional although there is also an example of mutual type of relationship, like in case of Poland and Russia (marked as "PL <> RU"). Sometimes the content using these terms indicated the hybrid activity towards other entity but without explicitly stating the source from which this activity originated (case "? > ME") and so forth.

Summing up the total relations that have been determined, it is evident that they can be classified into the categories of the so called *internal* and *external* cases. The "internal" part of the scene was largely dominated by the themes like "Agrokor" and/or disputes between political parties and individuals. On the other hand the "external" cases were mostly filled with the content that dealt with undisputed or claimed Russian influence towards different actors.

Conflicts. The type of conflict basically indicates orientation of the hybrid activity. It was determined by analysing the content after which it became apparent what type of conflict, or at least its indication, we were dealing with. The categories are: "Internal", "External", "Mixture", "Outside-In", "Inside-Out" and "N/A". Figure 5 shows the distribution of conflict types over the categories.

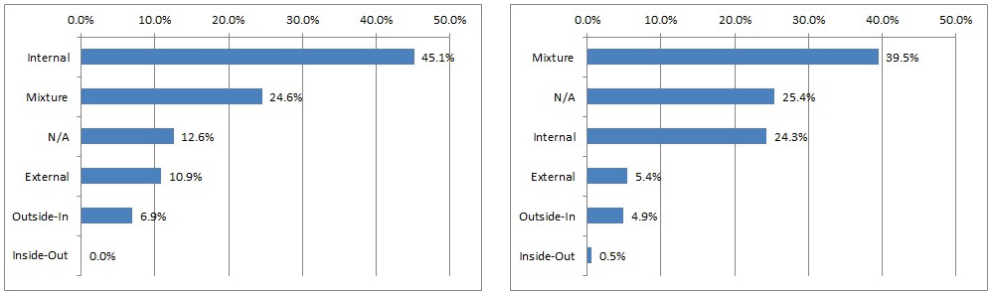

Figure 5. Display of the percentage distribution of conflict types for defined categories, for: a) "hibridni rat" (left) and b) "hibridno ratovanje" (right)

Defined categories are explained next. The category "Internal" indicates the content dealing with internal Croatian issues. Typical representative of this category are posts that used the terms "hibridni rat" or "hibridno ratovanje", and sometimes both, in clashes among different political parties or fractions of a particular party. "External" category refers to the contents dealing with foreign factors (states, groups, etc.) that do not explicitly include Croatia. The "Outside-In" category is assigned to the content that uses the terms in context of foreign threat directed towards Croatia. On the opposite side, the category "Inside-Out" belongs to the content mentioning Croatia in the context of acting towards someone else. Clearly, "N/A" is reserved for the cases that cannot be assigned to any of the types listed.

InfoTypes. The last classification separates the content based on the type of information in question (Figure 6), the division is as follows. The "Comment" was the most numerous category of the information type, that represented the content posted in the media including the analysed terms, and that was written by journalists or authors known as editors, bloggers, etc. The authors of a comment typically discussed the particular topic related to the terms in question.

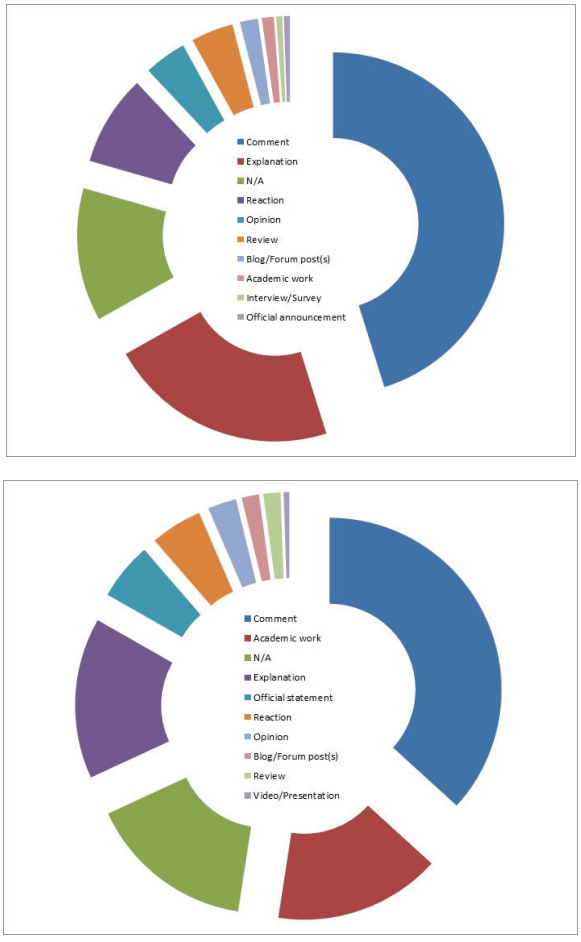

Figure 6. The types of information provided by the contents for: a) "hibridni rat" (top) and b) "hibridno ratovanje" (bottom)

The "explanation" refers to the (point of) view or opinion usually presented by the expert in the field. The experts who "explained" usually came from the ranks of university professors, security experts, scientists, etc. The "reaction" is a verbal or written response of, typically an individual, to an event, media caption, callout or the like containing the analysed terms. The "opinion" is someone's (usually politician's, member of a parliamentary party, association, etc.) expressed judgment in the media in which the terms discussed appeared. The "review" category stands for a type of content that is a form of a formal assessment i.e. evaluation of statement, event, or similar, related to the terms considered. Other "InfoTypes" such as "blog/ forum posts", "academic work", "interviews" and "surveys" are types of information believed to be self-explanatory and familiar to the reader.

Discussion

Based on the review performed the authors want to point at the development of the usage of these terms, as they have entered the media space and how they became a sort of a buzzword that started to be abused. Furthermore, the authors will try to determine whether a hybrid war(fare) was actually present in Croatia at the observed time and finally emphasize the limitations of the review.

Use of the Terms

From the outcomes of the performed analysis we can conclude that in early stages, that is, initially when they were just beginning to enter the vocabulary, these terms were used in the proper context. At a time, they were mostly used by government officials in an attempt to point out certain existing activities, events and phenomena. Essentially, it was about presenting initiatives that came from the European Union level, aiming at protecting its space from hybrid activities. The primary concern here was the protection against Russian influence which it had faced in recent years. Such announcements were not so numerous but they had a strong resonance within the general public. In part, the reason for this was that most of ordinary citizens only

then were confronted with the use of terms "hibridni rat" and "hibridno ratovanje". Partly astonished and partly surprized many sought clarification of their meaning.

What followed was a series of materials and discussions as well as television shows that including a number of experts invited to explain what this was really about. As expected, a numerous reactions followed as more and more both public and media became interested and involved in discussion. At that moment the exponential increase of published materials was filling the media space. This took place in the last months of 2017. At that time, most of the content still maintained the required level of objectivity.

Unfortunately, this period was followed by what conditionally can be called the third and last phase. It was characterized by the general decline in expertise and professionalism in approaching the problem. At that moment numerous media began to abuse the terms involved, simply because citing them was a great way to gain attention. In the flood of the contents of various types, the impression of relevance of the problem was lost. This coincided with the moment of peak number of publications per time during the observed period. This way the important message was somehow "drowned" in the overall noise present at that time. As in many cases, once consumed, such messages simply lost their potential for the popular media. This brought it back to a virtually similar position it initially had – and that is back into the hands of experts who are competent to deal with the issue. The analysed content dominantly remains available online thanks to the technological platform through which it was published.

Hybrid War(fare) is (not) present in Croatia

Strictly speaking, and given the criteria that every conflict has to fulfil in order to be considered a "war(fare)" (Cullen and Reichborn-Kjennerud, 2017; Mladenović, 2016), the authors of this paper can claim with a considerable certainty that there were no events of that kind in Croatia during the period this research is considering. This premise is primarily based on the fact that the presence of armed forces of other countries, either regular or irregular, was not detected at Croatian territory or at least was not publicly disclosed.

In short, if there are no occupation troops on the ground nor the state of war declared, there are no elements to claim the presence of war in its classical sense.

On the other hand, considering the nature of a modern war(fare), the same situation can be viewed differently. As we stated in the introductory part of the paper, within the observed period, the situation not only on Croatian territory but also in a number of other state aspects (diplomatic, economic, etc.) was characterized by a number of circumstances and events that can be characterized as threats. Some of these can undoubtedly be related to what is in literature termed as a projection of "soft power" (Nye, 2009) which in addition to the aforementioned forms of war, may also include media, intelligence and various other activities. The advancement of society, primarily in the technological segment, has made this type of activities possible and increasingly present, while at the same time difficult to identify, especially when compared with what is considered as traditional modes of war(fare).

Given that and considering the nature of contemporary conflicts, the authors take the right to conclude that within the observed circumstances it is not convenient to talk about the acts of war in its narrow sense. What can be argued, with a sufficient amount of certainty, is that within the analysed period it was possible to detect elements of what can be characterized as a form of influence operations targeted towards general public. Since these fit into the so called hybrid modes of action, it can be stated that hybrid activates were present at a time.

Limitations of the Study

Before moving on to the concluding part of the paper, authors consider it necessary to point out certain limitations of this study. They serve to emphasize the boundaries of this work but also to provide guidelines and encourage future research in this field.

First, the review intended to analyse the contents under the Croatian national domain (.hr). This way only a segment of the content existing in the digital media space of the Republic of Croatia was identified. A significant amount

of other contents that uses the terms "hibridni rat" and "hibridno ratovanje" is hosted elsewhere, especially on platforms of neighbouring countries. For the purpose of this study the analysis had to be narrowed primarily due to the fact that wider analysis would require significantly greater resources and effort not available at the moment.

Another important limitation is the fact that search was performed using the terms "hibridni rat" and "hibridno ratovanje". Due to the fact that Croatian language has seven cases the search has not been performed for the different forms of these collocations. Their forms are: "hibridnog rata", "hibridnom ratu", etc. … as well as "hibridnog ratovanja", "hibridnom ratovanju", etc. Identification of the digital contents that uses these terms requires additional analysis.

Finally, the identification of the contents was based on the results acquired using Google services. They were selected based on the functionality they provide, which was suitable for implementation of this study, as well as their popularity. Certainly a similar research could have been conducted using some other services. Comparison of the results would certainly be interesting, so this is also guidance for potential future work.

Instead of conclusions

Analysing the statements primarily provided by the government representatives we can conclude that the terms "hybrid war" and "hybrid warfare" were used in the digital media space at that time primarily with purpose of drawing attention to certain facts and ongoing events that characterized that period. Viewed from the time distance, their application was probably aimed at raising public awareness and kind of mobilization of the public for the purpose of protecting national interest. Undoubtedly, in the confusion that was created, there were statements that could have been communicated more properly. Most of these are result of live access to media, usually in the form of answers to direct questions at press conferences and similar events, at which an immediate response was expected. It is understandable that in these situations a lack of wording or formulations may occur, which are later perpetuated in the media.

On the other hand, the media's approach to this topic was quite diverse. From the content it is evident that the part of the media sought to convey the messages in their original form. Some posts were accompanied by an unbiased view of either authors or invited commentators concerning the topic. In these cases, the commentators were competent professionals such as university professors, analysts, or experts of various profiles specialized in the field. This formed what we may refer to as relevant and thus desirable volume of media contents. On the other hand, the review detected a certain amount of irrelevant content that followed in which terms were misused.

Based on the above, it is possible to provide a form of guidance or better to say suggestions for dealing with the situation similar to the one described. At first place it can be argued that by strengthening state and government mechanisms through institutions, regulations, services, etc. it is possible to efficiently tackle the problem of hybrid threats. It is clear that the ongoing overload with contents and the continuous flow of information is hard to cope with, even for the media. However, the best way to oppose the negative intentions wherever they came from is through professionalism, objectivity, source verification and above all, the critical approach of each individual. Development of skills that enable us to distinguish between others' opinions or fake *info* from what the actual truth is seems to be the best way to protect ourselves and the community at large. This requires everyone to remain informed but critical consumers, the ones that constantly review and reassess facts.

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STRATEGOS

Vulnerability assessment of the Croatian cyberspace to information warfare campaign via means of malicious websites comments

Dalibor Gernhardt

Abstract

Influencing masses is one way of achieving military and political goals. As seen in the U.S. 2016 election campaign, adversaries are prepared to go great length to test new ways of battle. When event such as terrorist attack or natural disaster strikes, people are prone to believe anything they see without questioning the source or truthfulness of information. This work focuses on researching steps necessary to be performed by adversaries aiming to perform influence operation by method of placing malicious comments on websites. Potential adversary must evaluate target, identify most relevant websites and analyse commenting systems to make decision how to exploit them. Once adversaries choose course of action, their next step is creation of trustworthy, in this case Facebook profiles, which later can be used for malicious operations. For purpose of testing this methodology, vulnerability assessment of the Croatian webspace is performed, and Facebook as a dominant platform for writing comments is identified. In conclusion a formula for estimation of workforce required for creation and maintenance of false Facebook profiles is given. Knowledge about adversaries' action is essential for effective defence in hybrid warfare environment.

Keywords

hybrid warfare, cyberspace, websites comments, social networks, influence operation

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Introduction

Hybrid warfare is if not always, then at least very often performed by influencing masses. Although information warfare in military terms is not a new term, its usage in cyberspace is

relatively new. Both NATO and Russian military doctrine recognise cyberspace, in 2016 NATO defined cyberspace as "Domain of Operations" (North Atlantic Treaty Organisation, 2016) and Russian Military doctrine form 2010 allows shaping of favourable reaction via means of information warfare (Russian Federation, 2010). It is important to note that in west, cyber security and information security are separated, considered to be two different fields. In Russia cyber is a part of information security (Jaitner, 2015). One of many kinds of information operations is by writing malicious comments on regular news web sites with goal of shaping favourable public opinion. These comments can be bias to some topic, they can be used for: spreading false information, rumours, encouraging society division etc. Spread of false information can be explained through example of Trojan horse, where Trojan citizens themselves, after being influenced and persuaded by single individual (an agent for spreading influence – an mediator), brought in a wooden horse (bearer of misinformation) in their city, Trojans were acting like "resonance boxes" spreading misinformation from one to another until they all thought that bringing wooden horse in city is a good idea (Volkov, 2002). According to (Vojak, 2017), false information can also be accidental: viral fake news or irresponsible media, or intentional: for profit or fake news as an agent of chaos or influence. Examples of false information are described in great detail in work (Vojak, 2017).

This work aims to identify attack preparation process of adversary wanting to prepare small-scale attack modelled after case of U.S. 2016. election and influence operation conducted by Internet Research Agency (IRA). Case of IRA is well known and documented inside of U.S. but there are no works which describe how vulnerable Croatian society would be to similar, but simplified campaign, limited only to writing comments on webpages.

This work assesses vulnerability of Croatian websites on hypothetical small-scale information influence operation, modelled after IRAs campaign, where

adversary wants to shape and destabilise public trust only by mean of writing forged user comments on web portals containing news or news related web pages. For average user these comments and personas behind them need to appear as written by real persons, so it is assumed that attacker will use convincingly forged fake social networking accounts, mimicking real user behaviour.

This work is structured as follows: First, the tactics of IRA are examined, followed by a general revision of the options for placing comments on websites. In the next chapter, for the purpose of testing possible adversary tactics, Croatian news web portals are examined and their commenting system analysed. In this chapter, Facebook will be recognized as a platform that allows reaching the majority of websites. Assuming that a potential adversary will try to imitate a real Croatian Facebook user, a model of the average Croatian Facebook user is given. Since the adversaries wants to protect their fake accounts from detection, an overview of Facebook's countermeasures regarding the detection of such accounts is given. This is followed by an examination of challenges adversary faces during operation. The paper concludes with a model that estimates the size of group required to maintain malicious accounts before activation.

Scenario role model: Internet Research Agency

Majority sources regarding Internet Research Agency (IRA) are coming from court cases and from research journalism. This chapter aims to summarize available data regarding this institution and tries to give an objective description of the operation conducted. Institution known as Internet Research Agency (IRA) was situated in St Petersburg, Russia. This institution employed civilians, and performed highly complex large-scale influence campaign through usage of social media: groups, ads, user status updates, mems, and among other, by comments on mass media portals and social networks – Troll farms (Chen, 2015; United States District Court for The District of Columbia, 2018; U.S. Senate Intelligence Committee, 2019). Goal of the campaign was to divide Americans among themselves by initiating and amplifying existing divisions in society.

Tactics used by IRA can be shortly described as: high volume and multiple channels. IRA used both: fake and stolen social media profiles. Each employee was responsible for maintenance of multiple online social network (OSNs) profiles and had received daily tasks with topics for coverage, with a daily quota to meet. According to (Chen, 2015) daily targets for employees were: 10 non-political posts, 5 political posts and 150 to 200 comments on co-workers' posts to make their, fake, profiles look legit. Operators (employees) received training on local American narrative and current topics. Team leaders ensured daily targets are met. Operators were never in direct contact with IRA's "upper" departments, departments assigned with monitoring and giving objectives. IRA's large-scale operation used almost all available online social networks, internet platforms and even creating cross platform connections between forged accounts to make accounts more believable, examples are: Facebook, Instagram, Reddit, YouTube, LinkedIn, Vine, Tumblr, 4chan, 9gag, Gmail, Pinterest, Gab, Meetup, VKontakte, LiveJournal. Desired effect was to cause information overload and overwhelm target audience (Chen, 2015; U.S. Senate Intelligence Committee, 2019).

In 2018 the United States District court for the district of Columbia filed a criminal case against IRA and its affiliates for purpose of influencing federal elections during period from 2014 to present day (United States District Court for The District of Columbia, 2018). IRA and associates were accused for "…posing as U.S. persons and creating false U.S. personas, operated social media pages and groups designed to attract U.S. audiences." (United States District Court for the District of Columbia, 2018). Among other, IRA was accused for: using stolen identities of real U.S. persons, traveling to U.S. for intelligence purpose, using computer infrastructure partly based in the U.S. to hide Russian origin, buying political advertisements on social media, staging political rallies inside the U.S., all stated by operating through a number of Russian related entities.

Organisation was headed by management group organized in different departments such as: data analysis, search engine optimisation, IT department, graphic department, and finance department. Organisation regularly evaluated its content to ensure that all posts and operations appeared as of authentic U.S. personas. Online social media accounts had

hierarchy and some accounts were used to promote another. To obscure operators' true location and to make them appear as they were operating from inside of U.S. they used computer space on servers located in the U.S. and connected them via virtual private networks (VPNs). It is estimated that IRA managed to abuse Facebook ad system by carefully placing targeted divisive ads, ads that were 10 times more effective than standard ads (Ribeiro *et al.*, 2019). Some analysis of IRA's Twitter accounts points to existence of standardized accounts types named: *Right Troll, Left Troll, Newsfeed, Hashtag Gamer, Fearmonger* depending on topics dominating on these accounts (Linvill and Warren, 2018).

According to available data, it is clear that IRA was well funded, well organised, with clear goals and working in conjunction with Russian Main Intelligence Directorate (GRU) (U.S. Senate Intelligence Committee, 2019). GRU's hacking group (advanced persistent threat group known by name APT28) role was to obtain sensitive documents by hacking "employees of major U.S. political campaigns" (U.S. Senate Intelligence Committee, 2019) and in assistance with later release of stolen documents with IRA.

Online social network profiles used by actors like one described in case of IRA are hard to distinguish from real accounts because behind them is human and these profiles to untrained eye act completely normal until activated. Organisations like IRA monitor language skills of their employees and adjust their working schedule according to time zone of targeted geographic area. Although IRA was shut down, it not likely that it is the only organisation conducting these kinds of information operations. In U.S. Congress committee report stated that ability to identify Russian activity on social media platforms was limited and reliant on social media companies to identify these threats (U.S. Senate Intelligence Committee, 2019) meaning that without close cooperation with private organisations it is very difficult to identify these threats. Other researches have also pointed out that although methods for detection of malicious accounts do exist, those methods are relying on analysing data that is only available to social networks themselves, and generally not available to other parties (Adewole *et al.*, 2017; Wani and Jabin, 2018; Hannah, 2020)online social networks (OSNs.

Options for placing comments on websites

Web sites enable their users to place comments on their pages to encourage discussions, increase traffic to websites, and even as source of information for their articles. From technical perspective, administrators can implement commenting systems using different methods. To make whole process simpler and to gain higher volume of user comments website may have no registration policy, meaning that any visitor to webpage can make comments to articles. Trade of this approach is higher time spent in moderation of user comments and comments lack of quality. Websites regularly perform moderation of user comments due to: house rules, profanities, spam, hate speech, divisive speech and fake news (Reich, 2011). Some of stated reasons for moderation, such as profanities, are easy to perform by usage of automated filters, but regardless of level of automation the whole process is both: time and resource consuming for website owner. For websites, first step of moderation is to decide how users can make comments as shown in Figure 1. Web sites have options to leave anonymous commenting without account, use their own account system, or use social media account for login (Limba and Šidlauskas, 2018)data may spread through cyber space at the speed of lightning. News portals constantly update the information available at their disposal by posting new articles. In order to attract new readers and to retain existing ones, in addition to focussing on publishing quality content, portal managers work on continuously improving their sites. These websites may have various interactive features, among them the opportunity to comment on an article. In some news portals, the number of anonymous comments is particularly high. The activities of online commenters and the issues related to their anonymity have always generated heated discussion owing to a number of reasons, including the content of the comments, the right of the commenters to remain anonymous and the extent to which the portal manager could be held liable. News portals equipped with an anonymous commenting function give rise to a culture of online bullying and hate-mongering where the cyber-criminals feel immune from punishment and existing control measures are insufficient for addressing the problem. The advocates of anonymous commenting argue that it promotes freedom of expression and portal administrators claim they can control defamatory and offensive anonymous comments by deleting

them. The article discusses the theoretical aspects of anonymity, anonymous commenting and anonymous comments. Based on a case study of the most popular news portals in Lithuania, and, in particular, on a comparative analysis of the privacy policy and the environment for commenting in three of them, the authors offer empirical data on the ratio between the number of comments and that of the commenters. The main purpose of the article is to reveal the peculiarities of anonymous comments' management of the news portals that enjoy the greatest popularity in Lithuania.","author":[{"dropping-particle":"","family":"Limba","given":"Tadas","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Šidlauskas","given":"Aurimas","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Entrepreneurship and Sustainability Issues","editor":[{"dropping-particle":"","family":"Tvaronavičienė","given":"Manuela","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-1","issue":"4","issued":{"date-parts":[["2018","6","29"]]},"page":"875-889","title":"Peculiarities of anonymous comments' management: a case study of Lithuanian news portals","type":"article-journal","volume":"5"},"uris":["http://www.mendeley.com/documents/?uuid=dca26e7f-c096-4a07-b34c-6a71ddc2d822"]}],"mendeley":{"formattedCitation":"(Limba and Šidlauskas, 2018. In all cases real name of user is not guaranteed.

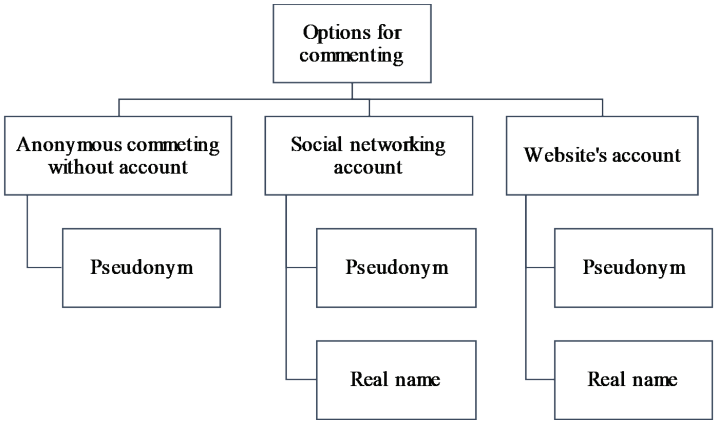

Figure 1. Model for selecting options for commenting (Limba and Šidlauskas, 2018)data may spread through cyber space at the speed of lightning.

News portals constantly update the information available at their disposal by posting new articles. In order to attract new readers and to retain existing ones, in addition to focussing on publishing quality content, portal managers work on continuously improving their sites. These websites may have various interactive features, among them the opportunity to comment on an article. In some news portals, the number of anonymous comments is particularly high. The activities of online commenters and the issues related to their anonymity have always generated heated discussion owing to a number of reasons, including the content of the comments, the right of the commenters to remain anonymous and the extent to which the portal manager could be held liable. News portals equipped with an anonymous commenting function give rise to a culture of online bullying and hate-mongering where the cyber-criminals feel immune from punishment and existing control measures are insufficient for addressing the problem. The advocates of anonymous commenting argue that it promotes freedom of expression and portal administrators claim they can control defamatory and offensive anonymous comments by deleting them. The article discusses the theoretical aspects of anonymity, anonymous commenting and anonymous comments. Based on a case study of the most popular news portals in Lithuania, and, in particular, on a comparative analysis of the privacy policy and the environment for commenting in three of them, the authors offer empirical data on the ratio between the number of comments and that of the commenters. The main purpose of the article is to reveal the peculiarities of anonymous comments' management of the news portals that enjoy the greatest popularity in Lithuania.","author":[{"dropping-particle":"","family":"Limba","given":"Tadas","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Šidlauskas","given":"Aurimas","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Entrepreneurship and Sustainability Issues","editor":[{"dropping-particle":"","family":"Tvaronavičienė","given":"Manuela","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-1","issue":"4","issued":{"date-parts":[["2018","6","29"]]},"page":"875-889","title":"Peculiarities of anonymous comments' management: a case study of Lithuanian news portals","type":"article-journal","volume

":"5"},"uris":["http://www.mendeley.com/documents/?uuid=dca26e7f-c096-4a07-b34c-6a71ddc2d822"]}],"mendeley":{"formattedCitation":"(Lim ba and Šidlauskas, 2018

Websites tend to use social networking account login systems to broaden the audience. Users do not have to go through registration process, remember usernames and passwords. All user needs to do is to login using existing social networking account and it is immediately set to place comments. This approach is beneficial for both web pages and users: web site administrators do not have to worry about user's registration process, email addresses, forgotten passwords, securely storing users' passwords etc. Using social media plugin for login or commenting is also a measure of reducing spam and increasing creditability of comments because each user is signed with, assumingly, real name and surname, often has profile picture attached. For every placed comment it is visible who is the author, and the author's public social media profile is available to every other user resulting in more credible comments. Web site administrators leave user verification to another party – social networking site. Additional benefit is that web pages get data about visitors needed for advertisement purposes. On the other hand, some users care more about privacy and they are not willing to share their identity. It is important to note that online social networking sites have full access to user activity.

Analysis of Croatian's news web portals

In this hypothetical scenario, adversary wants to influence public by placing comments on websites. At least to the author, there is no known data or methodology on how to prepare for this kind of operation, nor how it is done in practice. In this situation, best method is to try to think like adversary would. As one of first steps of any successful operation is intelligence preparation, adversary is likely to ask following questions:

- how many relevant news related web sites exist in targeted area,
- how many of them enable their readers to comment on articles, and
- how do websites manage user accounts.

For purpose of testing this approach, in following text Croatian webspace will be analysed. To identify most influential news web pages, first step is to identify valid data source regarding websites visits. In case of Croatia, largest publicly available dataset is available via Gemius.com2 service. For purpose of identification of most relevant Croatian websites at the time of writing this article data for month of November of 2019 was used (Gemius S.A., 2020). The goal was to reduce list of websites to only relevant sites and to discard minor websites with low traffic and activity. From initial list of web sites, only sites with 100 000 unique visits during observed month were analysed. Furthermore, Gemius public dataset is not limited to websites containing news, so websites focused on: fashion, sports, cars, health concerns, family or children advices are excluded from analysis because they are not relevant, as they have low possibility of political influence via method of placing comments. After applying described filters, from initial list of 54 web portals with more than 100 000 visits, 18 of them were dismissed due to non-political content. During initial review it was noticed that some popular portals are missing from the list because they do not participate in Gemius program. To objectively supplement Gemius dataset, an alternative list of most visited websites called SimilarWeb3 was used (SimilarWeb LTD, 2020b). In alternative list, only basic information is offered free of charge, and furthermore, SimmilarWeb uses different visitor counting methodology meaning that visit data present in the SimilarWeb dataset is not directly comparable to visit data in the Gemius dataset. After data review, two websites (index.hr and forum.hr) were added into analysis, but due to different visitor data methodology their visit numbers will not be considered in a latter discussion. Real adversary would likely have access to data behind paywall and thus could use single data source, nevertheless the methodology for determining relevant websites is unaffected. In total, 38 Croatian news web sites were analysed (Table 1.) with over 200 million

2 Gemius dataset is created by collecting cookie and browser data for advertising purpose and, among other information, gives information of unique visits during months period. Data is available for following countries: Belgium, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Romania, Serbia and Slovakia.

3 SimmilarWeb is web analytic platform which gathers worldwide data regarding websites traffic, referral sources by usage of different methods.

views during one observed month. Each site was visited, and following topics were assessed:

- Are visitors allowed to post comments?
- If comments are enabled, what method is used:
  - proprietary commenting system (website account),
  - Facebook login or Facebook commenting plug in,
  - Google login,
  - no registration required.

Table 1. Commenting system on most visited Croatian web sites as December 2019, visit data compiled form (Gemius S.A., 2020)

	Website	Visits [millions]	Commenting enabled	Social networks plugins		Website account	Anonymous comments
				Facebook	Google		
1	24sata.hr	40.82	Yes	Yes	Yes	Yes	No
2	net.hr	26.29	Yes	Yes	No	No	No
3	vecernji.hr	23.66	Yes	Yes	No	Yes	No
4	dnevnik.hr	20.92	Yes	Yes	No	No	No
5	rtl.hr	16.87	Yes	Yes	No	No	No
6	tportal.hr	15.73	Yes	Yes	No	No	No
7	telegram.hr	7.67	Yes	Yes	No	No	No
8	dnevno.hr	7.16	Yes	Yes	No	No	No
9	novilist.hr	4.62	Yes	Yes	No	No	No
10	express.hr	3.73	Yes	Yes	No	Yes	No
11	poslovni.hr	3.54	Yes	No	No	Yes	No
12	dalmatinskiportal.hr	3.27	No	/	/	/	/
13	direktno.hr	2.72	Yes	Yes	No	No	No
14	glasistre.hr	2.69	No	/	/	/	/
15	n1info.com	2.53	Yes	No	No	No	Yes

16	dalmacijadanas.hr	2.44	Yes	No	No	No	Yes
17	srednja.hr	2.07	Yes	Yes	Yes	Yes	Yes
18	hrt.hr	2.00	No	/	/	/	/
19	klik.hr	1.60	No	/	/	/	/
20	sibenik.in	1.30	Yes	Yes	No	No	No
21	podravski.hr	1.21	No	/	/	/	/
22	zagreb.info	1.17	Yes	Yes	No	No	No
23	epodravina.hr	1.03	Yes	Yes	No	No	No
24	istarski.hr	0.87	Yes	No	No	Yes	No
25	bug.hr	0.85	Yes	No	No	Yes	No
26	prigorski.hr	0.74	No	/	/	/	/
27	glas-slavonije.hr	0.73	Yes	Yes	No	No	No
28	zagorje.com	0.69	Yes	Yes	No	No	No
29	mirovina.hr	0.65	Yes	Yes	No	No	No
30	057info.hr	0.63	Yes	No	No	Yes	No
31	sbplus.hr	0.54	Yes	No	No	Yes	No
32	teen385.com	0.37	Yes	No	No	Yes	No
33	ebrod.net	0.36	Yes	Yes	No	No	No
34	lider.media	0.28	Yes	Yes	No	No	No
35	mojfaks.com	0.22	Yes	Yes	No	No	No
36	studentski.hr	0.18	Yes	Yes	No	No	No
/	index.hr*	n/a	Yes	Yes	No	No	No
/	forum.hr**	n/a	Yes***	No	No	Yes	No
Total:		202.15	32	23	2	11	3
Percentage of sites:			84.21%	68.75%	5.23%	28.95%	7.89%

**index.hr does not use same visit data methodology as other sites (Index promocija d.o.o., 2015),*

***forum.hr does use Gemius service, but visit data is not publicly available,*

****forum.hr is a popular bulletin board, not a news website as such.*

In total, 84% of observed websites enable users to post comments. Users with online social networks account can post comments on 69% of observed sites. Due to uneven visit distribution, number of websites enabling commenting option is not a valid measure. By comparing website views instead, it is possible observe real reach of social network accounts in Croatian websites. In Figure 2, a ratio between visits to websites in regard of options for commenting: Facebook commenting, other mean of commenting or no commenting is shown. By analysing ratio between sum page views on all websites enabling comments and sum page views of all websites that enables login via Facebook platform, we come to result that out of total 190 million views on sites with comments enabled, 179 million views or around[4] 94% are websites using Facebook platform. All results of websites evaluation are shown in Table 1.

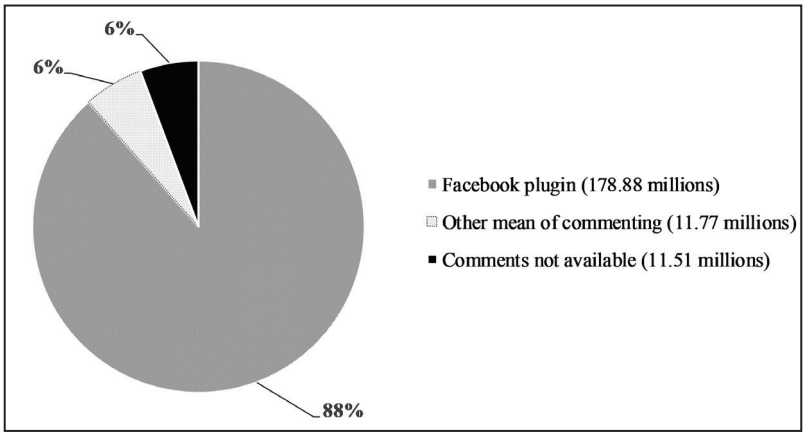

Figure 2. Distribution of commenting options compared to total website visits in observed time period, number in brackets shows number of visits in observed month

4 Directly comparable visit data for index.hr and forum.hr is not available, other publicly available data states that index.hr has around 50 million visits and forum.hr around 5 million visits per month (SimilarWeb LTD, 2020a). Since index.hr does use Facebook plugin and forum.hr does not, when we take visit numbers into account, then we are dealing with roughly 230 million visits with Facebook plugin and 17 million using different means, looking the data this way total reach by Facebook plugin is higher (230 millions), but percentage is slightly lower at approximately 93%.

In conclusion, for potential adversary aiming to place comments on Croatian websites, Facebook social media account is identified as most viable option. By using single Facebook account adversary can have access to 94% of totally viewed webpages which enable users to make comments (in observed time period). In this way adversary can use one account to access almost all webpages without necessity dozens of different accounts. Main disadvantage of this centralised approach can be viewed in following: if Facebook account is compromised, then attacker will no longer have access to all websites where account was used to post comments.

Facebook as dominant platform

Modelling of average Facebook user in targeted area

As shown in previous chapter, Facebook is identified as a dominant platform in Croatian society, especially for enabling placement of user comments on websites. Adversary aiming to exploit commenting system via Facebook accounts wants to create convincing Facebook accounts, mimicking real user daily behaviour with goal of making Facebook automated fake account detection more difficult. Adversaries next step is modelling of average Facebook user in targeted area. Most of publicly available data regarding Facebook users is aimed for marketing purposes. Most public reports do not state methodology of information collecting, they focus on different users' habits and present statistics of users living in different countries, using different time periods thus making direct comparison difficult. Not all data is available for all geographical regions, making Facebook user modelling using publicly available data difficult.

To make assumption on average Croatian Facebook user following publicly available data was used:

- average Croatian comments other users status update five time a month - 0.16 status comments per day (Arbona d.o.o., 2019),
- average Croatian user makes one status share per month (Arbona d.o.o., 2019),

- average Croatian user likes one page per month (Arbona d.o.o., 2019),
- average Croatian 17 times per month visits advertised web pages (Arbona d.o.o., 2019),
- data regarding average Facebook usage time for Croatian user is not publicly available, but we can approximate it using knowledge that during 2019. average U.S. Facebook user older than 18 years spent 37 minutes[5] a day using Facebook (Droesch and eMarketer, 2019),
- in addition, as beginning of 2019 Croatia had 1.9 million of Facebook users, 1.1 million of Instagram users and 168.5 thousand of Twitter users (Hootsuite, 2019).

According to available data, results reveals that although most websites offer for their users to use Facebook for placing comments, average Croatian Facebook user is not very active, and for potential adversary it would be relatively easy to mimic real user behaviour. One person could maintain relatively large number of fake profiles.

Facebook measures against fake accounts

Facebook itself is aware of platform exploits and it is fighting against "Inauthentic Behaviour", and in one such report stating that Facebook removed 50 networks of such accounts worldwide (Rosen *et al.*, 2019). As one measure filters detecting accounts and pages who repeatedly share confirmed misinformation[6] are installed without noting if this measure is language dependent. Most of these measures are aimed toward to 2020 US elections although Facebook representative in one report stated that they removed 36 suspicious French accounts posting about various political topics

5 Measured time includes all time spend on social platform regardless of user multitasking, meaning that social platform has been accessed for 37 minutes in average while user could have done other things simultaneously, for example having opened multiple tabs in web browser (Droesch and eMarketer, 2019).

6 Authors of the report do not distinguish between terms misinformation (*false or wrong information which are accidentally transmitted and which can lead to damage – not sent with intent) and disinformation (false or wrong information sent with intention of influencing opinion in favour of person who is sending information)* (Tuđman, 2012)

(Gleicher and Facebook, 2018). It is noted that that recent accounts used to spread influence are more sophisticated and harder to detect than those in case of IRA (Facebook, 2018). Attribution of malicious accounts is difficult because actors behind them (like IRA or some other groups) improve their techniques once being uncovered. Facebook attributes actors in four general categories based on: (1) Political motivations, (2) Coordination, (3) Tools, Techniques and Procedures (TTPs) and (4) Technical Forensics (Stamos and Facebook, 2018). In report (Rosen and Facebook, 2019) Facebook estimates that 5% monthly active accounts are fake accounts without stating are they automated, bot accounts or connected in any measure with politically motivated accounts. During a period from January to September of 2019 5.4 billion, mostly automated fake accounts have been disabled (Facebook, 2019).

Facebook does not publicly disclaim technical details on how are they discovering fake accounts, giving only few technical examples such as: blocking certain IP addresses and even ranges if they detect large number on new accounts originating from that IP, network or location, removing accounts using suspicious email addresses and actions, removing accounts if other users report it as fake (Facebook and Schultz, 2019). As previously noted, in U.S. Congress committee report it is stated that detection of malicious accounts is reliant on social media companies themselves and governments have limited influence (U.S. Senate Intelligence Committee, 2019).

Adversary

Adversary challenges

As Facebook has been identified as a dominant platform, in this chapter focus is given on adversary challenges regarding creation of fake Facebook profiles. Adversary can create many fake profiles at once, but if he does so, it is likely that this action will trigger suspicion. To create profiles which are both: convincing and difficult to automatically detect, it is likely that they will be gradually created over time, long before information operation itself.

These accounts can be created and maintained for years, and weaponized when needed. From different types of possible accounts types described in detail (Adewole *et al.*, 2017; Wani and Jabin, 2018)online social networks (OSNs, in this case we will focus on manual creation of accounts. These accounts can be created either by using non existing identities, by using stolen personal information or by usage of existing but stolen social network accounts[7]. Adversary aims to craft and maintain accounts in such way to deter automatic detection. For example, for Facebook it would be easy to detect large number of accounts that have been inactive for years and then suddenly activated at once. As result, adversary must maintain activity on forged, fake accounts even when not in use for they intended purpose. Adversary will likely use both fake and stolen identities for creation of social network profiles. At time of writing, Facebook procedure for reporting usage of stolen identity states that victim itself must report identity theft and provide evidence for identity theft in form of a personal document, otherwise request won't be considered by Facebook (Facebook, 2020). Knowledge about this relatively complicated procedure makes usage of stolen identities by adversary more likely. Adversary will likely exploit fact that detection of fake profiles is reliant of social network providers meaning that attacked side will have problems defending against such attacks as visible in examples presented in (Hannah, 2020).

Depending on adversary intentions, it can perform small scale operation by placing targeted comments on selected topics at targeted geographical area and thus attract less attention and suspicion from intended victim, potentially making this kind of operation very effective. If adversary engages in larger operation it is more likely to gain higher attention, potentially leading to state officials starting to investigate links of comments and user accounts possibly leading to compromise of whole operation.

Adversary wants to have reliable social media accounts, accounts which will not trigger suspicion when inspected by both: average user and some automated detection system. Those accounts need to be specially tailored

7 According to (Ablon, Libicki and Abler, 2014) on black market stolen social network profiles can have greater value than stolen credit card information.

to meet specific mission requirements. As discussed in earlier chapters, adversary must find a way to mitigate commonly used detection methods and it is likely to deal with following challenges:

- as each IP address reveals its approximate physical (geographical) location, accounts need to obscure their physical location to deter automatic detection (one mean of achieving this is by using multiple VPN connections to multiple densely populated areas to avoid correlation of accounts due to location proximity and behaviour),
- avoiding IP and possibly geographical location contact between accounts to deter automatic correlation between accounts, accounts need to consistently login form similar locations with goal of not attracting unwanted attention,
- avoiding correlation between accounts time of activity (i.e. accounts are often active at the same time),
- how to mimic real social media user behaviour with limited data regarding real users' behaviour available,
- evaluate and choose best approach to add friends to social media accounts: connecting fake accounts in networks or avoid contact and try to add real people to its friend list,
- adjust hours of activity of fake profiles to those of targeted time zone users,
- how to achieve a synergistic effect of all accounts,
- how to validate effectiveness of operation.

Estimate on personnel necessary for account maintenance

Putting technical challenges aside and knowing these kinds of operations have been performed in past, goal of this chapter is to estimate personnel resources necessary for maintenance of dormant (relatively inactive – at this phase not used for writing malicious comments) accounts. Due to large number of possible adversaries' modus of operandi, only a preparation phase (consisting of creation and maintenance of social network accounts) is analysed. By comparing publicly available data about average Croatian

Facebook user with data regarding accounts used by IRA as shown in Table 2, it is evident that potential adversary could not directly apply IRAs model due to significantly different level of user activity. Comparing to accounts used by IRA it is visible that average Croatian user is significantly less active and potential adversary could maintain more fake accounts per real person compared to IRAs case of six accounts per employee.

Table 2. Comparison on IRAs social media accounts and average Croatian Facebook user, data derived from (Seddon, 2014; Chen, 2015; Arbona d.o.o., 2019)

IRAs social media accounts	Average Croatian Facebook user
10 non-political, five political posts per day	one per month
150–200 comments per day	five per month
50 comments to news articles	*no data available*
Other, not directly comparable, available data	
Each blogger maintains six Facebook accounts Each blogger maintains 10 Twitter accounts with up to 2000 followers and 50 tweets a day	Average Croatian user likes one page per month

If adversary wants to have convincing Facebook accounts at its disposition, they need to be maintained 24/7 and especially tailored for specifics of certain geographical area. For getting representative value, we will examine much workforce is necessary to perform 24/7 operation. Let's introduce following variables:

T_{da} = [*minutes per profile*] – targeted daily activity (T_{da}) for single social network account,

A_{wf} = [*number of persons*] – available workforce (A_{wf}) maintaining accounts,

W_m = [*minutes*] – amount of daily working time in minutes (W_m) shown per employee, for example in case of 8 working hours, excluding brakes, this value equals to 480 minutes.

To address necessity of accounts to be active on every day of month regardless off weekends, additional factor is introduced C_w – Corrected week. If single employees have 5-day workweek then simple ratio of workweek days and actual week length will enable us to compensate for weekends, this factor can be treated as a constant (1):

$$C_w = \frac{\text{Numbers of workdays in week}}{\text{Numbers of days in week}} = \frac{5}{7} \tag{1}$$

As accounts must be maintained in convincing looking 24/7 operation, so we need to model different amount activity during day and night period. For example, we can assume 90% daily, 10% activity during night, in other words, if adversary has 20 persons at its disposal 18 persons will be working during daytime and two employees will always be unavailable during daytime because they perform night account maintenance (temporarily ignoring other factors as they are all modelled as independent). We can approximate this by factor of Daily activity (D_a):

D_a = [*no dimension*] – ratio of daytime and night activity, for example, a value of 0.9 means that accounts spend 90% of time during daytime.

In previous steps we have reduced all variables to daily level. Now by simple multiplication of variables it is possible to roughly approximate adversary's number of Fake profiles (F_p) with a given constraints. To recap, number of Fake profile depends on available workforce (A_{wf}), ratio between day and night accounts usage (D_a), multiplied by weekend correction factor (C_w of 5/7) and it is limited by average time that adversary wants to spend working on each account – $\frac{W_m}{T_{da}}$. If we assume there is no overlap between accounts activity (one employee works on one account at any given time) and multiply each of factors stated above, we can approximate number of fake profiles (F_p) as linear function of multiple variables (2):

$$F_p = A_{wf} \times D_a \times C_w \times \frac{W_m}{T_{da}} \quad (2)$$

Given formula (2) takes into consideration necessity for both day and night maintenance during every day in a year and as results gives number of profiles that could be maintained with given parameters and resources. Results depend on available workforce (operators behind profiles), ratio of day to night activity and total targeted daily activity of fake profiles.

We can put this formula to use by assumption that adversary wants to perform squad to company sized operation while spending 20, 30 or 40 minutes daily per fake Facebook profile and by using following values for variables:

$A_{wf} = 10 - 120$ [*number of persons*] – squad to company sized operation,

$D_a = 0.9$ [*no dimension*] – assuming accounts spend 90% of time during daytime,

$C_w = \frac{5}{7}$ [*no dimension*] – five workdays in a week,

$W_m = 480$ [*min*] – assuming each employee works for full 8 hours,

$T_{da} = 20, 30, 40$ [*min/profile*] – comparing 3 cases of activity time.

In case of $A_{wf} = 10$ *people* and $T_{da} = 40$ *min/profile*:

$$F_p = A_{wf} \times D_a \times C_w \times \frac{W_m}{T_{da}} = 10\ people \times 0{,}9 \times \frac{5}{7} \times \frac{480\ min}{40\ min/profile} \approx 77\ profiles \quad (3)$$

By using presented methodology, we come to conclusion that with given parameters, 10 operators can continuously maintain about 77 profiles. Complete results of this hypothetical scenario are shown in Figure 3, due to multiple variable influencing results, this result can be used only as a rough estimate of personnel necessary for maintenance of dormant account. By using selected parameters, we can estimate one platoon sized force (30 people) can maintain between 232 (for 40 minute a day activity) and 464 (20 minutes of day activity) of fake Facebook accounts. Due to fact that average

Croatian Facebook user is inactive compared to U.S. user (Table 2) time spent online on single account could be even shorter that assumed 20, 30 and 40 minutes per day, resulting in higher number of accounts.

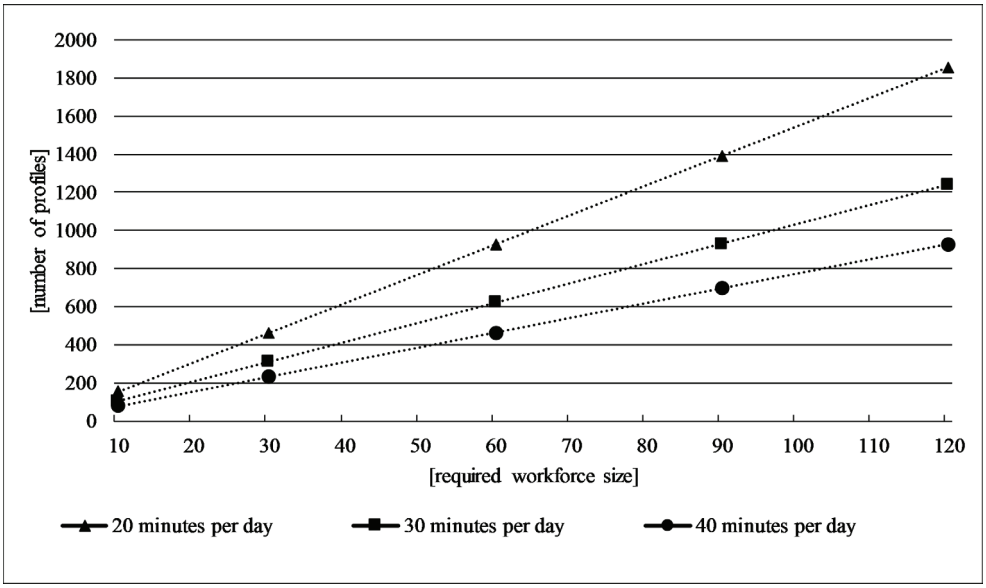

Figure 3. Number of dormant Facebook accounts depending on available workforce and account activity of 20, 30 and 40 minutes per day

This model concentrated only on personnel necessary for working on accounts, not on management, logistic or IT staff necessary for creating the conditions for operation. Once adversary deploys these accounts (starts placing malicious comments) it is difficult to give an estimate on number of personnel required due to different nature of every operation, desired goals, effect etc.

Conclusion

For defence against hybrid warfare, knowledge about threats, adversaries, motives, goals, techniques, tactics and procedures is essential. Without better understanding of the problem, it is not possible to employ adequate defence. As the example of IRA shows, adversaries are prepared to make great efforts to achieve their goals by using cyberspace opportunities. This paper focuses on one segment of cyber information warfare and attempts to identify steps that must be taken by adversary. In case of placing malicious comments that is to identify key websites in some countries webspace, identify how and when comments should be written and how to exploit them later. In test case of Croatia, it is shown that through usage of Facebook accounts as primary vector for placing comments it is possible to reach 94% of Croatian viewed pages meaning that potential adversary will most likely try exploit Facebook platform. Results of evaluation will vary from country to country and adversary must assess each country individually. Once adversary identifies mode of operation, adversaries' goal is to mimic real users in targeted area and creation of falsely trustworthy accounts which are dormant until used for information operation itself. As shown, adversary wanting to mimic Facebook user, faces multiple unknowns which can be used to reveal malicious activity. Analysis shows adversary aiming to create fake Facebook profiles, while not in use, can maintain dozen accounts per one operator. Knowledge about adversary steps is essential for planning defence against hybrid threats. For future work it is necessary to test same or similar methodology to another countries revealing differences between countries and examining wider range adversaries' procedures.

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Stručni članak

STRATEGOS

Planinsko ratovanje: pojam, povijesni pregled, definicija i terminologija

Rafael Šubat, Stipo Semren

Sažetak

Posljednjih godina u suvremenom svjetskom kontekstu primjetna je ponovna aktualizacija planinskog ratovanja kroz ustrojavanje specijaliziranih planinskih postrojbi i pokretanje inicijative NATO saveza (osnivanje centra izvrsnosti planinskog ratovanja) te Europske unije (EU Mountain Training Initiative). Aktualizacija je potaknuta iskustvima mirovnih misija u Narodnoj Republici Afganistanu. Međutim, definicija planinskog ratovanja i pripadajuće terminologije još nije jasno utvrđena, pogotovo u kontekstu vojne doktrine. U radu je izvedena definicija planinskog ratovanja i najvažnijih pojmova vezanih uz planinsko ratovanje kako bi ono bilo razjašnjeno te kao svojevrsno upoznavanje i temelj za ostale radove o ovoj temi. Potom je dan kratki pregled povijesti planinskog ratovanja u svjetskom kontekstu, ali i u kontekstu Republike Hrvatske, uz četiri studije slučaja koje trebaju poslužiti kao uvod u specifičnosti rata i operacija u planinskim područjima, a koje nude bitne lekcije za budućnost.

Ključne riječi

planine, planinska područja, planinsko ratovanje, operacije u planinskim područjima, planinsko pješaštvo

Abstract

The recent foundation of NATO Mountain Warfare Centre of Excellence and the implementation of the „European Union Mountain Training Initiative", along with the organization of specialized mountain troop showcase a significant focus shift on Mountain Warfare. The focus shift was prompted by the experiences of peacekeeping missions in the People`s Republic of Afghanistan. However, exact definition of Mountain Warfare and its terminology has not been clearly stated, especially in the context of military doctrines. The paper presents the definition of Mountain Warfare and the most important terms related to it in order to clarify it, and as an introduction and basis for other works on this topic. Also, paper presents the history of Mountain Warfare in the world context, and in the context of the Republic of Croatia along with the four case studies that serve as an introduction to specifics of Mountain Warfare and operations in mountainous area and offer important lessons for the future.

Keywords

Mountains, Mountainous Area, Mountain Warfare, Operations in Mountainous Area, Mountain Infantry

Uvod

Vojska je inicijalno osnovana s jednom ulogom: ostvarivanje ciljeva naroda i političkog vodstva provedbom operacija. U početku su to bile isključivo ratne operacije. Danas vojne organizacije teže visokoj profesionalizaciji, a dinamika suvremenih međunarodnih odnosa proširuje vojne operacije izvan okvira samog stanja rata[1] pa one više nisu istoznačnica[2].

Operacije su nizovi taktičkih akcija sa zajedničkom svrhom ili ciljem, a mogu se podijeliti po više karakteristika (ADRP 1-02, 2016).[3] Jedna od

1 Pri tome je u prvom redu riječ o pružanju potpore civilnim institucijama.

2 Operacije odgovora na krizu ili u nekim slučajevima operacije potpore miru.

3 Po doktrinarnoj hijerarhiji operacije se mogu podijeliti na: obrambene, napadne, operacije stabilnosti i operacije potpore; prema okvirima na duboke, bliske i operacije u pozadini; ili prema cilju na: odlučujuće, oblikujuće i podržavajuće operacije (FM 3-0, 2017).

podjela operacija je podjela s obzirom na područje ili dimenziju u kojoj se provode. U toj se podjeli, prema ZDP-1A (2014), operacije dijele na kopnene, pomorske i zračne.[4] U svakoj od dimenzija na provedbu operacija utječu određeni čimbenici, što skreće pozornost na jednu od ključnih funkcija u vojsci, funkciju planiranja. Jedan od ciljeva planiranja je umanjenje utjecaja specifične dimenzije provedbe.

Kopnene operacije provode se na kopnu i domena su kopnene vojske, a pri planiranju uzimaju se u obzir utjecaj terena i vremena u meteorološkom smislu.5 Iako se takav utjecaj ne može potpuno otkloniti, on se odgovarajućim planom može umanjiti ili iskoristiti protiv neprijatelja. Iako se kroz povijest događalo da kopnene vojske provode i druge vrste operacija i obrnuto, ustroj i obuka kopnene vojske u najvećoj se mjeri fokusira na provođenje kopnenih operacija. Međutim, vojne publikacije ipak ističu nekoliko vrsta kopnenih operacija koje se provode u specifičnim uvjetima i koje zahtijevaju posebne mjere kako bi se ti uvjeti umanjili, iako su po svojim obilježjima i dalje kopnene operacije. Koje su to operacije i koliki je raspon različitosti među njima? Spada li planinsko ratovanje među navedene i ako spada, koja su njegova obilježja? Kako se ono uklapa u suvremeni kontekst vojnih operacija?

Vodeći se iskustvima međunarodnih vojnih operacija i međunarodnih vojnih misija, naročito onih iz Islamske Republike Afganistana, primjetan je porast popularnosti stvaranja specijaliziranih planinskih postrojbi. O tome svjedoči i osnivanje NATO centra izvrsnosti planinskog ratovanja[6] te stvaranje MTI[7] inicijative Europske unije. Uzevši u obzir da je 85 % kopnenih granica među svim državama prekriveno planinskim područjima (Safer, 2014), vjerojatnost

4 Doktrina OSRH-a prepoznaje navedene tri vrste operacija, dok ADRP 3-0 (2017) toj podjeli dodaje još svemirske operacije, operacije u elektromagnetskom spektru, operacije u kibernetičkom prostoru te informacijske operacije.

5 Prilikom planiranja zadaća provodi se raščlamba čimbenika zadaće pod engl. pokratom METT-TC (engl. *Mission, Enemy, Terrain and Weather, Time, Troops, Civil Considerations*) – misija, neprijatelj, dostupne postrojbe, vrijeme u kronološkom smislu i civilna razmatranja i već navedeni teren i vrijeme u meteorološkom smislu.

6 Dostupno na: https://www.mwcoe.org/nato-mountain-warfare-centre-of-excellence/.

7 Engl. *Mountain Training Initiative*, dostupno na: https://www.mti.bmlvs.gv.at/.

da u budućnosti neće doći do sukoba u navedenim područjima vrlo je niska. U kontekstu Republike Hrvatske važnost izučavanja operacija u planinskim područjima postavlja i sudjelovanje u daljim operacijama potpore miru.

Prvi će dio rada biti posvećen terminologiji i definiranju operacija u planinskim područjima kako bi operacije u planinskim područjima bile jasno odvojene od ostalih vrsta operacija, a terminologijom postavljen temelj za dalje radove o ovoj temi. Drugi će dio rada prikazati ključne specifičnosti operacija kroz četiri studije slučaja.

Operacije u specifičnim okruženjima

Broj i vrste izdvojenih operacija razlikuju se od publikacije do publikacije. Prijevod ATP 3.2. (2005) navodi 7 vrsta operacija u specifičnim okruženjima. ATP 3.2.1. (2009) navodi 9 vrsta, dok publikacija „The Small Unit Tactics" (2015) navodi 6 vrsta. Iako postoje neslaganja u pogledu broja i vrsta operacija koje su prezahtjevne kako bi se u tom smislu zvale „samo" kopnene operacije, sve se publikacije slažu u pogledu operacija u planinskim područjima. Za potrebe ovog rada bit će preuzeta podjela operacija u specifičnim okruženjima iz „The Small Unit Tactics" (2015), koji ističe:

- operacije u urbanim područjima
- operacije u džunglama
- operacije u planinama
- operacije u ekstremno hladnim uvjetima
- operacije u pustinjama
- operacije u utvrđenim područjima.

Operacije u urbanim područjima u suvremenom su kontekstu najčešće operacije, što je vidljivo i iz sukoba u Ukrajini i Siriji. Utjecaji na provedbu operacija u urbanim područjima su brojni; stalna prisutnost civilnog stanovništva, rat na četiri razine8, područja s industrijskim postrojenjima, ograničena mobilnost zbog zgrada, ali i velike otvorene površine poput

8 Podzemlje, razina tla, razina katova zgrade i razina krovova. Detaljniji pregled operacija u urbanim okruženjima dostupan je u ATTP 3-06.11, 2011.

parkirališta samo su neki od njih. Operacije u urbanim područjima za suvremenu su vojnu organizaciju danas ono što su nekad bile operacije na ravničarskim ili šumskim područjima, dakle postale su dio svakodnevice pa se vojne organizacije tako i obučavaju ili bi barem trebale.

Operacije u utvrđenim područjima imaju dosta sličnosti s operacijama u urbanim područjima, kao što je ograničena mobilnost i vrlo često svođenje na blisku borbu tijekom zauzimanja i zgrada i fortifikacijskih sustava kao što su rovovi.

Operacije u pustinjama donose potpuno novi oblik izazova. Pustinju obilježavaju velika, prazna područja, bez ikakvih ograničenja za mobilnost. Međutim, visoke dnevne i niske noćne temperature te štetni utjecaj pijeska na oružje, opremu i vozila uvjeti su koji pred vojnu organizaciju postavljaju velik izazov i zahtijevaju prilagodbu. S druge strane, operacije u tropskim šumama vezane su uz područja s tropskom klimom[9], koja obiluje padalinama, vlagom i stalnim visokim temperaturama. Sve navedeno, uz ozbiljna ograničenja mobilnosti nametnutih gustim raslinjem, vojnu organizaciju stavlja na veliku kušnju.

Od navedenih međusobno su najsličnije operacije u planinama i operacije u ekstremno hladnim područjima. Zbog klime u planinskim područjima, ona su najčešće hladna i prekrivena snijegom, zbog čega Pierce (2008) navodi da su, zbog logike, ekonomičnosti i povijesti operacije u planinama i operacije u ekstremno hladnim uvjetima „dvije strane istog novčića". Planinska su područja zbog svoje visine i klimatskih uvjeta najčešće i ekstremno hladna područja. To uključuje jake vjetrove; snijeg koji u nekim planinskim područjima opstaje i tijekom cijele godine ili pada mnogo ranije nego na nižim nadmorskim visinama te donosi opasnost od lavina; niske temperature i uvjete smanjene vidljivosti. Fenomen padanja temperature s rastom nadmorske visine specifičan je za planinska područja. Prema ICAO-u[10] temperatura pada 6,5 °C svakih 1000 m n. v. (ICAO, 2019). MCTP 12-10A (2016) također navodi

9 Države poput Vijetnama, Burme i Malezije. Općenito se tropska klima veže uz raspon geografskih širina 23,5° južno i sjeverno od ekvatora.

10 Engl. *International Civil Aviation Organization.*

pad od 3 do 5 °F[11] svakih 305 m n. v., dakle približno 2 do 3 °C svakih 300 m n. v.

Sličnost leži i u naseljenosti i infrastrukturi područja. Ekstremno hladna područja i planinska područja zbog teških su vremenskih uvjeta i terena najčešće vrlo rijetko naseljena. Iz navedenog proizlazi i nedostatak cestovnih pravaca i infrastrukture općenito.

Međutim, operacije u planinskim područjima i operacije u ekstremno hladnim uvjetima ipak nisu isto. Iako su po niskim temperaturama i utjecajima vjetra te naseljenosti planinska i ekstremno hladna područja ista, specifičan utjecaj planinskog terena na ljude, oružje i opremu nije zanemariv. Terenski uvjeti u ekstremno hladnim područjima i planinskim područjima ipak se razlikuju. Sva planinska područja ne moraju uvijek biti pokrivena snijegom, što znači da su najčešće to područja kamenitog tla. Ako teren zahtijeva penjanje, razlikuje se penjanje na stijenama i na ledu. Također, nezanemariv je utjecaj visine i kompleksnosti planinskog područja na provedbu operacija.

Pri obuci postrojbe za operacije u planinskom području sigurno će morati savladati i elemente iz operacija u ekstremno hladnim uvjetima, što se u obrnutoj situaciji neće dogoditi. Iz toga proizlazi da se postrojbe obučene i opremljene za operacije u planinskim područjima mogu efikasno uporabiti u ekstremno hladnim uvjetima, o čemu svjedoči primjer 5. Gebirgsjaeger divizije iz sastava Wehrmachta, koja je bila obučavana za planinsko ratovanje, ali je provodila i operacije u ekstremno hladnom području Rusije.

Konačno, iako operacije u planinskim područjima i operacije u ekstremno hladnim područjima imaju neke zajedničke karakteristike, one su jednake samo u onoj mjeri u kojoj postrojbe obučene za planinsko ratovanje mogu provoditi operacije u ekstremno hladnim okruženjima. Sukladno tome, i pri klasificiranju područja, ako se u ekstremno hladnim područjima nalaze i planinska područja, primat ima klasifikacija područja kao planinsko, a tek nakon toga kao ekstremno hladno.

11 1 °F = 0,556 °C.

Definicija planinskog ratovanja

Kako bismo mogli definirati i razjasniti operacije u planinama, najprije treba definirati i klasificirati planinsko područje, koje prema Saferu (2014) zauzima oko 35 % ukupne Zemljine površine.

Prema Hrvatskom planinarskom savezu, „planine ili gore su u geografskom smislu dijelovi Zemljine kore viši od 500 metara visine" (HPS, 2019). Pahernik (2012) planine ili gore definira kao „prostrana, veća uzvišenja, relativnih visina u odnosu na okolno zemljište iznad 500 metara". U tom kontekstu statistički ljetopis DZS-a (2018) navodi kako je 21 % teritorija Republike Hrvatske više od 500 m, što znači da je petina teritorija pokrivena planinskim područjem.

Nacrt NATO publikacije ATrainP6 (2018) planine definira kao „prostorno zatvorene više dijelove Zemljine površine koji su odvojeni od ravnijih susjednih zemljišta istaknutim podnožjem i sastoje se od usamljenih vrhova, dolina i platoa". Sukladno navedenom, za definiciju planine bit će uzeta Pahernikova definicija. Nadalje, ako se govori o širem području od planine, odnosno o „nizovima planina, gora i planinskih lanaca i dolina", onda je riječ o planinskim područjima (Kuhar, 2015).

Postoji više načina klasifikacija planina, u geološkom ili u geografskom smislu. Klasifikacije prema načinu nastanka ili vrstama stijena neke su od klasifikacija u geološkom smislu. U geografskom smislu jedna je od značajnih klasifikacija ona prema visini planine, kao što je prikazano u Tablici 1.

Tablica 1. Klasifikacija planina prema visini (MCTP 12-10A, 2016)

Apsolutna nadmorska visina	Klasa planinskog područja
manje od 152 m	vrlo nisko
152 m do 305 m	nisko
305 m do 914 m	srednje nisko
914 m do 1829 m	srednje visoko
1829 m do 3048 m	visoko
više od 3048 m	vrlo visoko

Prikazana Tablica 1 sadrži jednu nelogičnost, reljefni oblici ispod 500 m n. v. nisu planine, što je vidljivo iz prethodnih definicija. Nadalje, gledano s vojnog stajališta, nije važna samo visina jer ona nije jedini čimbenik koji utječe na provedbu operacija. U tom pogledu najvažnija je klasifikacija s obzirom na sveukupni utjecaj planine na provedbu operacija, odnosno taktička klasifikacija. Navedena je prikazana u Tablici 2 i klasificira planine s obzirom na tri faktora ključna za provedbu operacija:

- visinu
- mobilnost koju teren pruža
- klimatske uvjete.

Planinski teren ATrainP6 (2018) definira kao „dio sveukupnog prostora planine koji ima određene specifične karakteristike kao na primjer: nagib padine veći od 15° ili varijacije u vrsti tla."[12] Dakle, planinski teren dio je sveukupne planine, što znači da se planina može podijeliti na više planinskih terena. Nadalje, kao ATTP 3-21.50 (2011) i MCRP 3-35.1A (2013), ATrainP6 (2018) ističe dvije klasifikacije planinskog terena prema:

- razinama u kojima se provode operacije
- mobilnosti koju teren pruža pješačkim postrojbama, koje su prikazane u Tablici 3 i Tablici 4.

12 Na primjer, padina s tlom prekrivenim kamenim oblutcima manjeg promjera, većeg promjera ili travnata padina. Vrsta tla utječe na provedbu kretanja po njemu i samim time na provedbu operacija, što je uzrok dijeljenja cjelokupnog planinskog područja na niz planinskih terena, radi lakšeg planiranja.

Tablica 2. Taktička klasifikacija planina (ATrainP6, 2018)

Apsolutna nadmorska visina	Klasa planina	Utjecaj
0 m do 2400 m[1]	Niske planine – okruglog oblika s umjerenim razlikama u visinama između vrhova i duboko usječenim dolinama. Klima može varirati od kišnih prašuma do hladnih klima u blizini Zemljinih polova. Mobilnost je ograničena za oklopljena sredstva, a može biti potrebna pomoć stručnjaka pri kretanju.	Nije potrebna prilagodba ljudstva na visinu ili je potrebna u maloj mjeri te nema utjecaja na sredstva i potporu ili je utjecaj malen.
2400 m do 5500 m	Visoke planine – visinom prelaze granicu rasta stabala. Kamenito tlo. Mala naseljenost i nedostatak prometne infrastrukture, najčešće omogućeno samo kretanje hodanjem. Gotovo stalan snježni pokrivač. U ovakvim bi se planinama trebale koristiti samo specifično obučene i opremljene postrojbe.	Ljudstvu je potrebna aklimatizacija i ima utjecaja na sredstva i borbenu potporu.
iznad 5500 m	Ekstremno visoke planine – pokrivene snijegom ili glečerima, niske temperature, uvjeti koji ugrožavaju život. Koristiti samo postrojbe s većom razinom obučenosti, spremnosti i opremljenosti od onih za visoke planine.	Potrebna je adaptacija i dobro opremljenog i aklimatiziranog ljudstva. Izloženost je moguća samo kratko vrijeme. Ozbiljni utjecaji na sredstva i potporu.

Tablica 3. Klasifikacija planinskog terena prema razinama (ATrainP6, 2018)

Razina	Opis	Implikacije
I	podnožje, dna dolina i glavne linije komunikacija	Teren dopušta operacije oklopnih snaga, ali im je manevar ograničen.
II	kose, padine i sedla koja nadgledaju podnožja i doline	Teren koji dominira nad razinom I. Najčešće samo pješačke postrojbe mogu djelovati na ovoj razini.
III	ključno zemljište na tjemenu	Dominira nad drugom razinom, ali je najteži za zauzeti i zadržati pa na njemu mogu djelovati samo specifično obučene pješačke postrojbe.

Tablica 4. Klasifikacija terena prema mobilnosti koju pruža pješačkim postrojbama (ATrainP6, 2018)

Klasifikacija	Opis
lagan planinski teren (hodanje, lagano penjanje)	Planinarenje uz lagano mjestimično penjanje. Dovoljna osnovna obuka vojnog planinarstva prema UIAA-u[2], razina I – II.
težak planinski teren (penjanje)	Penjanje uz osiguranje na stijenu, po snijegu ili padini glečera, korištenje specijalizirane opreme, napredni trening vojnog planinarstva, prema UIAA-u, razina II – III.
ekstremno težak planinski teren (teško penjanje)	Alpinizam (stijena, snijeg, led), korištenje specijalizirane opreme i tehnika, stručnjak vojnog planinarstva, prema UIAA-u, razina IV i više.

Vidljivo je da su granice klasa određene prema visini, odnosno utjecaju visine na ljudstvo, koje je najvažnije za provedbu operacija. Za boravak iznad 2400 m n. v. ljudstvu je potrebna aklimatizacija koja omogućuje normalno funkcioniranje i izvršavanje zadaća. Na visinama iznad 5500 m n. v. potrebne su značajne pripreme, a boravak je moguć samo određeno vrijeme. U izradi klasifikacije iskorištena je i ekspertiza UIAA-a, koja je specijalizirana za planinska pitanja. NATO klasifikacija osim terena obuhvaća i klimu[13], koja je uz teren najvažniji faktor u provedbi operacija u planinama, a upravo je interakcija tih dvaju čimbenika ono što čini provedbu operacija u planinskim područjima specifičnom.

Prikazani taktički pristup klasificiranju, koji obuhvaća glavne utjecaje na provedbu (visinu, mobilnost i klimu) te se spušta po razinama (na analizu planinskog terena), ističe kompleksnost provedbe operacija u planinama, a konkretnim informacijama pomaže i olakšava planiranje.

Preostaje definirati operacije u planinama i planinsko ratovanje. Prema ATrainP6 (2018), planinsko ratovanje je „uporaba snaga na planinskom terenu s velikim visinskim razlikama, specifičnim meteorološkim utjecajima i slabom ili nepostojećom infrastrukturom". Prema Clarkeu (2012), planinsko ratovanje je „združena upotreba funkcija vatre i manevra postrojbe radi provođenja taktičkih akcija na planinskom terenu ili na visokim nadmorskim visinama". Vidljivo je da je Clarkeova definicija preciznija jer indicira kako operacija treba uključivati uporabu vatri i manevra, odnosno borbeno djelovanje kako bi zapravo bila planinsko ratovanje. NATO definicija je šira jer se pod uporabom snaga mogu uračunati i djelovanja koja nisu isključivo ratna, poput operacija potpore miru. Stoga će NATO definicija biti uzeta kao definicija operacija u planinama kao pojam širi od planinskog ratovanja, dok će Clarkeova definicija biti preuzeta za definiciju planinskog ratovanja. Treba istaknuti da u publikacijama[14] Sjedinjenih Američkih Država definicija planinskog ratovanja nije dana.

13 Za detaljniji pregled klasifikacije klime vidi AECTP-230 (2009).

14 ATTP 3-21.50, 2011; MCTP 12-10A, 2016; MCRP 3-35.1A, 2013.

Tablica 5. Skup definicija

Pojam	Definicija
operacije u planinama	„Uporaba snaga na planinskom terenu s velikim visinskim razlikama, specifičnim meteorološkim utjecajima i slabom ili nepostojećom infrastrukturom." (ATrainP6, 2018)
planinsko ratovanje	„Združena upotreba funkcija vatre i manevra postrojbe radi provođenja taktičkih akcija na planinskom terenu ili na visokim nadmorskim visinama." (Clarke, 2012)
planinsko pješaštvo	Postrojbe pješaštva posebno organizirane, obučene i opremljene za provedbu operacija u planinskim područjima.
planinsko područje	„Nizovi planina, gora, planinskih lanaca i dolina." (Kuhar, 2015)
planina	„Prostrana, veća uzvišenja, relativnih visina u odnosu na okolno zemljište iznad 500 metara." (Pahernik, 2012)
planinski teren	„Dio sveukupnog prostora planine koji ima određene specifične karakteristike." (NATO ATrainP6, 2018)

Provođenje operacija u planinama predstavlja velik zahtjev i za osoblje i za opremu, što ističu Acosta (2003) i Safer (2014). Stoga se postrojbe posebno organiziranog, obučenog i opremljenog pješaštva za provedbu operacija u planinskim područjima mogu definirati kao planinsko pješaštvo. Međutim, navedeno ne isključuje mogućnost njihove uporabe i na drugim područjima.

Od ključne je važnosti za radove o ovoj temi prikazati jasnu terminologiju vezanu uz planinsko ratovanje. U skladu s navedenim, Tablica 5 objedinjuje definicije i termine. Kako navodi Seeborger (2016), a u pogledu planinskog ratovanja, standardizirane definicije i unificirana objašnjenja imaju presudnu važnost za prenošenje jasnih informacija.

Iz prikazanog se može zaključiti da operacije u planinskim područjima imaju određene specifičnosti koje, budu li zanemarene, mogu znatno utjecati na ishod operacija. Stoga je važno prikazati i pojasniti te specifičnosti. Povijest je pokazala i koje su to specifičnosti i kako se s njima nositi, a također i što se događa onima koji ih zanemaruju.

Povijesni pregled planinskog ratovanja

Na početku, važno je pitanje kada uopće započinje povijest planinskog ratovanja te kako se ono razvijalo. Koji su od sudionika bili naročito uspješni i koji su to čimbenici doveli do uspjeha? Je li to plod svojevrsne tradicije koja se oblikovala sudjelovanjem i poglavito obučavanjem u planinskom ratovanju?

Ratovanje postoji od samih početaka ljudske vrste pa tako nije čudno što Acosta (2003) navodi kako je početak planinskog ratovanja moguće pronaći već i u Himalajskoj kampanji Aleksandra Velikog[15], a Safer (2014) začetke

15 Aleksandar Veliki imao je određen broj ljudi koji su bili „osposobljeni" za planinsko ratovanje te su se istaknuli u opsadi Sogdiana, za koji se pretpostavlja da je u današnjem Tadžikistanu. Međutim, izvori (Sharma, 1992; Freeman, 2011) ne navode jasno jesu li navedeni pripadnici bili osposobljeni zbog same činjenice da su poticali iz planinskih područja, koju navodi Freeman (2011), ili je to rezultat stečenog iskustva tijekom vojnih pohoda (Sharma, 1992) ili su pak bili posebno obučavani kao planinske postrojbe, pa je taj prostor otvoren špekulacijama.

planinskog ratovanja pronalazi u Hanibalovu prelasku preko Alpa, unutar Drugog punskog rata, te tu tvrdnju dodatno razrađuje podjelom povijesti planinskog ratovanja na četiri faze[16].

Neupitno je kako su se u povijesti događali sukobi u planinskim područjima, naročito ako se u obzir uzme njihova geografska rasprostranjenost. Kroz srednji vijek u planinskim područjima odvijali su se sukobi Švicaraca i Austrijanaca. Napoleon se također okušao u planinskom ratovanju, vodeći ljude preko prijevoja Sant-Bernard i Simplon između Francuske, Italije i Švicarske, te u sukobima s pobunjenim Tirolcima u Alpama. Nadalje, zbog ustanka u Španjolskoj, odnosno pojave moderne „gerile"[17] (Lieb, 2018), Napoleon ustrojava planinsku postrojbu Chasseurs de Montagne, koja je bila ustrojena isključivo za borbu protiv španjolskih ustanika u Pirinejima, ali su oni nakon pada Napoleona ugašeni. Nakon Napoleona značaj planina prepoznaju i najpoznatiji teoretičari poput Clausewitza i Jominija[18]. Dragovoljačku planinsku postrojbu[19] osniva i Giuseppe Garibaldi, ali ona po završetku ratova za ujedinjenje Italije također biva ugašena. Međutim, za sve navedene primjere ne može se reći da predstavljaju planinsko ratovanje u pravom smislu riječi.

Većina navedenih aktera, kao što je i Hanibal, imala je veće gubitke u ljudstvu i materijalnim sredstvima od djelovanja planinskog područja, odnosno teškog reljefa i klimatskih uvjeta, nego od neprijatelja. Zbog toga je

16 Prednapoleonsko razdoblje (218. god. pr. Kr. – 1798. god.), razdoblje Francuskog utjecaja (1798. god. – 1872. god.), razdoblje Alpini efekta (1872. god. – 1945. god.), razdoblje nakon 2. svj. rata (1945. god. – danas).

17 Gerila od šp. *guerrilla*, što u doslovnom prijevodu znači mali rat. Gerilsko ratovanje predstavljaju posebne taktike malih grupa koje napadaju protivnika s velikim elementom iznenađenja, a zatim bježe, odnosno izbjegavaju odlučan sukob.

18 Clausewitz (2007) ističe da je utjecaj planina na provedbu operacija velik pa stoga zahtijevaju detaljnu analizu. Jomini (2008) se posvećuje još detaljnijoj analizi utjecaja planina pa ističe da one favoriziraju obrambeno ratovanje. Naravno, o ratu na planinskom području i važnosti zauzimanja terena već je i prije u svom djelu „Umijeće ratovanja" pisao Sun Tzu. Vidi više u: Minford, J. (2009) *Sun Tzu: Umijeće ratovanja,* Četvrto izdanje, Mozaik knjiga.

19 Tal. *Cacciatori delle Alpi*, hrv. Alpski lovci, osnovani 1859. god., a istaknuli su se u bitci kod Bezzecce 1866. god.

ovo razdoblje, nažalost, pogodnije nazvati „ratovanje protiv planine", a ne planinsko ratovanje.

Lieb (2018) je naveo zašto su se u starijoj povijesti sukobi vodili na ravničarskom terenu. Prvo, naselja su postojala samo na ravničarskom terenu, zajedno s poljoprivredom, a to je ono što je napadače tog vremena privlačilo. Nadalje, zbog taktike, odnosno uporabe falange, teren je morao biti više ili manje ravan. I zadnje, na planinska područja gledano je kao na područja bogova, u koja ljudi nisu trebali niti smjeli zadirati. Uz iznimku zadnjeg, svi su ostali razlozi opstali sve do vremena Napoleona. Iako falanga više nije bila upotrebljavana, linijske formacije[20] također su bile poznate po svojoj nefleksibilnosti i otežanosti kretanja po neravnom terenu. Stoga, iz navedenih primjera vidimo kako su planine najviše bile upotrebljavane za prelazak i ostvarenje elementa iznenađenja na neprijatelja dolaskom iz neočekivanog smjera. Ako je do sukoba u planinskom području i došlo, to su bili manji sukobi, neobučenih i nespremnih postrojbi, pa je tako ovu prvu etapu razvoja planinskoga ratovanja moguće opisati samo fazom „ratovanja protiv planine".

U pogledu planinskog ratovanja potrebno je uzeti u obzir tradiciju planinskog ratovanja koja se ogleda u postojanju specijaliziranih, profesionalnih postrojbi ustrojenih i obučavanih samo za planinsko ratovanje. Upravo ona predstavlja ključan faktor koji znači uspjeh ili neuspjeh, a jedino se početak stvaranja takve tradicije može držati sljedećom, drugom fazom u razvoju planinskog ratovanja.

Prva specijalizirana planinska postrojba su talijanski Alpini, osnovani 1872. godine. Za njima su u osnivanju slijedili francuski Chassuers Alpins. Nakon toga su uslijedile specijalizirane austrijske i švicarske postrojbe te njemačke postrojbe koje su ustrojavane u tijeku Prvog svjetskog rata.

20 Po razvoju vatrenog naoružanja, koplja se postupno zamjenjuju puškama s bajunetama. Sukladno tome, na bojištu se i dalje kreću velike linijske formacije, što je za uvježbavanje zahtijevalo mnogo vremena, a po čemu se najviše isticala pruska vojska.

Uzevši navedeno u obzir, početci planinskog ratovanja mogu se pratiti tek od nastanka specijaliziranih, trajnih[21], planinskih postrojbi, koje se i danas smatraju elitnima. Sukladno tome, prvi primjer planinskog ratovanja talijansko je bojište u Prvom svjetskom ratu, što je jedan od razloga zašto je ono prikazano u prvoj studiji slučaja.

Između dva svjetska rata, a naročito tijekom Drugog svjetskog rata, interes za planinskim ratovanjem ostaje vrlo visok. Postrojbe Gebirgsjaegera sljednica su Alpenkorpsa iz Prvog svjetskog rata i vrijede kao jedna od najkvalitetnijih postrojbi njemačkih oružanih snaga. Planinsku postrojbu osnivaju i Sjedinjene Američke Države i ona se ističe u nekim od najtežih europskih kampanja. S obzirom na obujam operacija i uspješnost, ovo se razdoblje povijesti planinskog ratovanja može nazvati njegovim zlatnim dobom.

Međutim, već nakon Drugog svjetskog rata primjetan je pad interesa za planinsko ratovanje. Do Korejskog rata 10. planinska divizija već je jednom bila ugašena i ponovo ustrojena, a u tom sukobu – iako je njegov velik dio bio vođen na planinskom području – nije sudjelovala. Iz navedenog se jasno očituje pad interesa za planinsko ratovanje, karakteriziran neobučenim postrojbama, koji ponovo više teži „ratovanju protiv planine". Godine 1958. divizija opet biva ugašena, a 1985. godine ponovo ustrojena, ali kao divizija lakog pješaštva. Ona postoji i danas, ali je ostala planinska samo u nazivu. Pedeset godina nakon Korejskog rata operacija *Anaconda*[22] otvara pitanje treba li SAD-u u suvremenom kontekstu specijalizirana planinska postrojba.

Paralelno s tim, ruska je vojska kroz povijest pobuna bila upletena u niz sukoba na planinskom području Afganistana, Čečenije i Gruzije, kako to navode Bartles i Grau (2011) te konstatiraju postojanje bogate ruske povijesti

21 Trajnih u smislu postojanja zbog provedbe operacija u planinskim područjima i na taj način stvaranja tradicije. Spomenuta Napoleonova planinska postrojba nije bila trajna, a i osnovana je za borbu protiv španjolskih pobunjenika, što zapravo znači da je ona više protupobunjenička nego planinska postrojba. S padom Napoleona prestaje španjolska pobuna, pa samim time prestaje postojati i navedena postrojba.

22 Operaciju *Anaconda* koalicijske su snage vodile protiv talibanskih snaga i snaga Al Qaide u ožujku 2002. god. na planinskom području koje okružuje dolinu Shah i-Kot u afganistanskoj provinciji Paktiji. Detaljnije u daljim dijelovima rada.

planinskih postrojbi, opreme i središta obuke. Međutim, zbog nedostatka sredstava, kako navode spomenuti autori, nakon raspada SSSR-a i ruska je vojska prestala obučavati specijalizirane planinske postrojbe, a nakon sukoba u Čečeniji ostala je s istim pitanjem kao i SAD.

Tezu o padu interesa potvrđuju i primjeri vezani uz područje Himalaje. U kinesko-indijskom ratu 1962. godine, indijske postrojbe učinile su propuste[23] koji jasno upućuju na to da nisu bile spremne za djelovanja na planinskom području. Sinha i Athale (1992) zaključuju kako je indijskom porazu pridonijelo više faktora, a među njima je najvažniji bio nedostatak planinske obuke vojnika i zapovjednika. Nadalje, u indijsko-pakistanskom sukobu 1999. godine u području Kargila, Indijci su učinili gotovo iste pogreške. Nakon što su pakistanske snage, sastavljene od lokalnog stanovništva naviklog na boravak na visinama, zauzele položaje na indijskom teritoriju koji indijske snage nisu nadzirale zbog zimskih vremenskih uvjeta, Indijci su ih pokušali poraziti. Unatoč brojčanoj superiornosti, u prvom pokušaju indijske snage nisu uspjele zbog neopremljenosti i neobučenosti. Uspjeh je postignut iz drugog pokušaja, tek nakon bolje organizacije i pripreme. Prema Acosti (2003), u indijskom drugom pokušaju presudila je primjena dobro usklađenih neizravnih vatri i manevra. Danas je Indija, posredstvom brojnih sukoba u planinskim područjima, svjesna važnosti planinskog ratovanja te ima organizirane škole planinskog ratovanja, a njena specijalizirana planinska postrojba Ladakh Scouts predstavlja jednu od najodlikovanijih indijskih postrojbi.

Suvremeni asimetrični sukobi usko su povezani s planinskim područjem, čime se povijest ponavlja. Već je prije spomenuta španjolska pobuna protiv Napoleonove vladavine unutar planinskog lanca Pirineja. Isti se obrazac može pronaći i u partizanskom djelovanju na području bivše Jugoslavije tijekom Drugog svjetskog rata te u Afganistanu, Čečeniji i svim već navedenim pobunama protiv ruske vlasti. Planine su zbog svoje izoliranosti i nepreglednosti uvijek predstavljale izvrsno utočište slabijima u borbi

23 Postavljanje promatračnica na logistički neodrživa mjesta, dovlačenje neaklimatizirane pričuve s nižih područja itd. Vidi više u Safer (2014).

protiv jačih. Army Field Manual (2003) stoga navodi kako su planine uvijek područja na kojima se borba prekida posljednja.

Sukladno tome, operacijama na planinskim područjima danas je potrebno posvetiti veću pozornost. Na tom tragu razvijene su inicijative Europske unije i NATO-a. Europska unija pokrenula je Mountain Training Initiative, kojoj je cilj koordinacija i standardizacija obuke planinskog ratovanja (MTI, 2019). NATO je značaj pridao osnivanjem centra izvrsnosti planinskog ratovanja u Republici Sloveniji sa zadaćom „asistencije zemljama članicama, partnerima i ostalim zemljama i internacionalnim organizacijama u ojačavanju sposobnosti planinskog ratovanja kroz navedena područja: razvoj specifičnih doktrina i taktika planinskog ratovanja, razvoj koncepata i eksperimentiranje, sustav naučenih lekcija, izobrazba i obuka, te potpora razvoju sposobnosti planinskog ratovanja. Njihova je vizija biti središte ekspertize planinskog ratovanja u NATO savezu" (MWCOE, 2019). Unutar centra sudjeluje i HV, čime ispunjava važnu ulogu u transformaciji NATO-a, a članstvo u centru itekako olakšava pristupačnost ekspertizi planinskog ratovanja. Naposljetku, članstvo znači i obvezu u razvoju specifičnih znanja i sposobnosti u toj vrsti ratovanja.

U kontekstu tradicije planinskog ratovanja u Republici Hrvatskoj, Hrvati su sudjelovali na talijanskom bojištu Prvog svjetskog rata na čelu s austrougarskim feldmaršalom Svetozarom Borojevićem. Međutim, Herman Kaurić (2014) konstatira kako postoji tek opće znanje o tome koje su postrojbe bile na kojem bojištu, ali da su gotovo sve hrvatske postrojbe poslane na talijansku bojišnicu 1917. godine. Također, određena iskustva postoje iz već navedenih partizanskih i pobunjeničkih operacija na području bivše Jugoslavije. Naravno, iskustva postoje i od specijaliziranih planinskih i brdskih postrojbi Jugoslavenske narodne armije, koja su i objedinjena unutar izdanih pravila upotrebe i priručnika (Planinarstvo u JNA, 1968; Pravilo pešadijska (brdska, planinska) brigada, 1975; Pravilo pešadijska (brdska-planinska) četa-vod, 1977; Priručnik o planinarstvu i alpinizmu, 1989).

Međutim, najrecentnija i najvažnija su iskustva iz Domovinskog rata, ponajviše vezana uz planinske prostore Velebita i Dinare. Operacije *Gusar, Zima 94, Skok 1* i *2, Ljeto 95* i *Oluja* i druge barem su jednim svojim dijelom

bile provedene u planinskim područjima. Nositelji planinskih djelovanja u tim operacijama bile su uglavnom gardijske brigade, postrojbe za specijalna djelovanja i postrojbe Specijalne policije, dakle djelovanja nisu provodile specijalizirane planinske postrojbe. Ipak, u ljeto 1991. formirana je specijalizirana planinska postrojba Planinska satnija Velebit[24], na način vrlo sličan ustrojavanju 10. planinske divizije koji je opisan u studiji. Iako to u ovom slučaju nije pokrenuto na zahtjev Oružanih snaga, PSV se dragovoljno formirao od pripadnika Hrvatskog planinarskog saveza uz osnovnu premisu da će se, kako navodi Berljak (1996), velik broj bitaka u Domovinskom ratu voditi u planinama. Organizirali su se od pripadnika iskusnih u alpinizmu i speleologiji te krenuli u provedbu djelovanja na Velebitu. U konačnici ih u držanju crte zamjenjuju postrojbe Specijalne policije, dok PSV dobiva zadaću njihova logističkog podupiranja te preuzima ulogu vodiča i ulogu obučavatelja pripadnika specijalnih postrojbi HV-a za planinsko ratovanje. Kako Berljak (1996) navodi, u nešto više od godine dana, između 1994. i 1995. godine, obučeno je više od 1000 pripadnika Oružanih snaga, koji su onda dalje prenosili znanja u matičnim postrojbama.

Uz PSV osnovan[25] je i Gorski zdrug[26], postrojba koja je od listopada 1991. godine provodila specijalističku planinsku obuku za vojnike, dočasnike i časnike Hrvatske vojske na Medvednici. Kopić (1996) navodi kako je zaključno sa 1993. godinom oko 2500 pripadnika Hrvatske vojske i policije pohađalo i završilo obuku.

Neupitan je uspjeh postrojbi HV-a i Specijalne policije na spomenutim bojištima, ali uz spomenutu obuku koju su provodili pripadnici PSV-a, nažalost ne postoji jasan podatak jesu li i ako jesu, u kojoj mjeri bile obučene za planinsko ratovanje ili je uspjeh moguće pripisati samo motivaciji. Dubravica i Rakić (2009) navode, vezano uz operaciju *Zima 94*, kako se na

24 U daljnjem tekstu PSV.

25 Obje su spomenute postrojbe osnovane iz iste inicijative, vidi više u Kopić, J. (1996) „Gorski zdrug", Planinari u Domovinskom ratu, Hrvatski planinar, Vol. 88, br. 7–8, str. 193–198.

26 Ime je preuzeto od postrojbi Hrvatskog domobranstva, koje su za vrijeme Drugog svjetskog rata djelovale na planinskim područjima NDH-a i koje su bile za to obučavane i opremane.

teškom dinarskom terenu i u teškim vremenskim okolnostima Hrvatska vojska bolje snašla i bila izdržljivija od neprijatelja. Iako je istim uvjetima svakako bio pogođen i neprijatelj, čija je vojska dotad već bila oslabljena raznim drugim problemima[27], što navodi Barić (2006), pitanje je što bi sve Hrvatska vojska uspjela napraviti da je bila obučena i pripremljena za navedenu vrstu ratovanja i koliko bi isti čimbenici smanjili rizik i smrtnost u tim operacijama. Odgovor na pitanje predstavlja jednu od mogućih tema za buduća istraživanja autora koji se žele baviti ovim područjem.

Iz navedenog je vidljivo postojanje temelja tradicije planinskog ratovanja u HV-u, iako ona još nije institucionalizirana kroz stvaranje specijalizirane postrojbe planinskog pješaštva u kojoj bi se provodila obuka temeljena na naučenim lekcijama iz povijesti, što se nameće kao ključan faktor za uspjeh u planinskom ratovanju. Treba li takva postrojba HV-u, pogotovo u kontekstu sudjelovanja u mirovnim misijama? Razumijevanje i primjena naučenih lekcija iz prošlosti predstavlja vrlo važnu domenu u općenitom napretku vojnih organizacija. Scales (1997) navodi da su promjene u prirodi rata spore kao i promjene u ostalim domenama kompleksnog ljudskog ponašanja. Međutim, navedene promjene vrlo je teško razumjeti, a još teže predvidjeti jer su za razliku od, primjerice, medicine, ljudska iskustva u ratu nestalna. Stoga su vojne organizacije prisiljene proučavati i oslanjati se na prošla iskustva kako bi se pripremile za budućnost.

Iz navedenog je vidljivo da je povijest i razvoj planinskog ratovanja moguće podijeliti na tri faze:

- 1. faza – faza „ratovanja protiv planine", koja je trajala od ljudskih početaka do 1872. godine, do osnivanja prvih specijaliziranih planinskih postrojbi
- 2. faza – faza planinskog ratovanja, zlatno razdoblje planinskog ratovanja; započinje stvaranjem specijaliziranih planinskih postrojbi, a završava krajem Drugog svjetskog rata 1945. godine
- 3. faza – faza opadanja aktualnosti planinskog ratovanja, koja traje od 1945. godine do danas.

27 Za detaljan pregled stanja u „Srpskoj Vojsci Krajine" pogledati: Barić, 2006.

U nastavku će biti prikazane četiri studije slučaja, namijenjene prikazu i razjašnjavanju specifičnosti planinskog ratovanja.

Talijansko bojište 1. svjetskog rata

Prvi svjetski rat započeo je 28. srpnja 1914. godine, a Italija se priključuje 1915. godine na strani Antante. Cilj Italije bila je brza pobjeda nad Austro-Ugarskom Monarhijom.[28] Uspostavljeno je bojište u dužini 600 km[29], gotovo cijelom dužinom u planinskom području Alpa, što se u povijesti tada dogodilo prvi put, kao i činjenica da su se tada prvi put sukobile postrojbe specifično ustrojene, obučene i opremljene za ratovanje u planinskim područjima. Sukob je trajao 29 mjeseci, a stradalo je oko 600 000 vojnika (geographical, 2015).

Ratovanje u takvom specifičnom okružju podrazumijeva specifične opasnosti i izazove. S tim u vezi dopisnik „New York Worlda" E. Alexander Powell zapisao je: „Ni na jednom drugom bojištu, ni na suncem spaljenim zaravnima Mezopotamije, ni u smrznutim mazurijskim[30] močvarama, niti u krvlju natopljenom blatu Flandrije, nije borac prisiljen na ovakve napore kako bi preživio, kao što je to ovdje na krovu svijeta" (smithsonian, 2019).

Uz uobičajenu opasnost rata, planinsko područje donosi dodatne izazove kao što su negostoljubiv teren i klimatski uvjeti, točnije velike količine snijega, lavine, vrlo niske temperature i vjetar. Sukladno tome, ATP 3-90.97 (2016) navodi da vojnik u planinskom ratovanju vodi dvije bitke, jednu protiv neprijatelja, a drugu protiv planine. Jedan austrougarski časnik ovako svjedoči o ratovanju u planinama: „Od 4. do 15. prosinca neprestano je sniježilo. Samo na nekoliko sati oko podneva nekoliko zraka sunčeve svjetlosti bi doprlo do Pasubija[31]. Ostalo vrijeme vladao je sumrak i tama, čisti

28 Detaljniji opis daje Wilcox (2014), dostupno na: https://encyclopedia.1914-1918-online.net/article/italian_front.

29 Za usporedbu, Krause (2015) navodi da se Zapadno bojište protezalo na oko 650 km; dostupno na istoj adresi.

30 Mazurija, pokrajina na sjeveru Poljske.

31 Pasubio (2232 m), jedan od vrhova Dolomitskih Alpi.

užas. Sada je krenulo vrijeme lavina. Lavine često uruše naše jednostavne zaklone izgrađene od drva i cerada, te uguše ljude. To je naše dnevno i noćno iskustvo. Jednom 40 ljudi, pa 80 ljudi, onda još jedna kolona nosača i tako danima. (...) stotine ljudi izgubilo se u snježnim olujama i nestalo, a njihova su tijela pronađena tek sljedećeg proljeća. Ljudi su odlazili u patrole i nikad se nisu vraćali. Zima je proždirala ljudska bića." (Lieb, 2018)

Uzimajući navedeno u obzir, i Talijani i Austro-Ugarska Monarhija imali su svoje specijalizirane postrojbe za planinsko ratovanje, ustrojene još prije Prvog svjetskog rata. Jedino ih Njemačko Carstvo na početku Prvog svjetskog rata nije imalo, ali je po prepoznavanju potrebe ustrojen Alpenkorps. Sastav Alpenkorpsa činile su postrojbe iz planinskih masiva Njemačke, poglavito Vogeza i Alpa, a takva je selekcija smanjivala vrijeme potrebno za obuku.

Sve su navedene postrojbe bile ustrojene i specifično obučene za ratovanje u planinskim uvjetima. Iz te su činjenice proizišli pothvati poput „Ceste 52 tunela"[32], čija je trećina duljine probijena kroz stijene. Cestu su izgradile talijanske postrojbe u 10 mjeseci kako bi mogle logistički podupirati svoje postrojbe u borbi. Ukopavanje rovova u stijene te probijanje tunela i položaja bilo je uobičajeno za bojište na Soči. Tuneli su korišteni i za napadne svrhe, pa je na vrhu Col di Lana u Dolomitskim Alpama iskopan tunel ispod austrougarskog položaja koji je bio napunjen eksplozivom i detoniran.

Tijekom 1918. godine, nakon 11 talijanskih ofenziva, centralne sile uspijevaju slomiti talijanski otpor i probiti bojišnicu. U toj se bitci[33] istaknuo i Erwin Rommel, tada zapovjednik satnije, a život i podvige u planinama opisuje u knjizi „Napadi", uključujući i operaciju *Kolovrat* iz spomenute ofenzive[34]. Pobjedom centralnih sila pobijeno je i dotad uobičajeno mišljenje da se odlučna bitka ne može voditi u planinskom području, kako to navodi i NATO (2018), a za to je zaslužna inicijativa nižih časnika i spremnost vojnika. Posredstvom kompleksnog terena kakav se nalazi u planinskim područjima, planinske postrojbe, kao i zapovjednici, moraju biti samostalni i mora im biti omogućen prostor za inicijativu.

32 Tal. *„Strada delle 52 gallerie"*.

33 Bitka kod Kobarida, 12. ofenziva.

34 Vidi detaljan opis u Rommel (1979).

Ovime su prikazani ključni faktori koje podrazumijeva planinsko ratovanje i specifični izazovi koje stavlja pred sudionike. Vremenski i terenski uvjeti na planinskim područjima ponekad predstavljaju veću prijetnju od samog neprijatelja. Hladnoća, visina i težak teren imaju utjecaj na ljudstvo, koje mora biti naviknuto na boravak u tim uvjetima, na oružje, koje se drukčije uporabljuje[35], i tehniku, koja je također pod posebnim opterećenjima i pojačanim trošenjem. Navedeno predstavlja prvu specifičnost planinskog ratovanja, onu koja ga izdvaja od ostalih operacija u specifičnim okruženjima. Uspjeh je već samo preživljavanje u području s navedenim uvjetima.

Kako bi se omogućilo djelovanje postrojbi u navedenim uvjetima ključna je specifična selekcija i obuka, a upravo je zbog toga, usprkos tvrdnjama spomenutih autora o postancima planinskog ratovanja, tek talijansko bojište prvi pravi povijesni prikaz planinskog ratovanja. O tome svjedoče postignuća poput spomenute ceste i položaja izdubljenih u stijenama, koji su vidljivi i danas. Naposljetku, na istom je bojištu ostvarena i odlučujuća pobjeda, čime je postignuto ono za što se mislilo da nije moguće u planinskom ratovanju. Bez specifične obuke, opreme i organizacije navedeno ne bi bilo ostvareno.

5. Gebirgsjaeger[36] divizija (Wehrmacht)

Kako navodi „German Mountain Warfare" (1944)[37], Nijemci vjeruju kako će specifično obučene planinske postrojbe odlučujuće utjecati na ishod operacija jer jedine mogu štititi napredak glavnine snaga ako se snage kreću dolinom ili rubnim dijelom planinskog područja. Također, na isti način mogu usporiti ili spriječiti kretanje neprijatelja. Stoga je prije i u okviru Drugog svjetskog rata Njemačka ustrojila sveukupno 17 planinskih divizija[38] (Bull, 2013): 11 divizija Njemačke vojske (Wehrmacht) i 6 divizija Waffen SS-a. Ipak, nije svih

35 Pritom se ponajprije misli na ciljanje jer je većina pušaka upucana na ravnom terenu, što na kosinama uzrokuje prebačaj zrna preko mete.

36 Njem. *Gebirgsjaeger* – planinski lovac, op. prev.

37 Spomenuti priručnik („German Mountain Warfare", 1944) na temelju podataka izradila je američka vojnoobavještajna služba, što potvrđuje impresivne uspjehe Gebirgsjaeger divizija.

38 Podatci u izvorima se razlikuju pa je preuzeta tvrdnja Bulla (2013).

17 postrojbi bilo specijalizirano planinsko, već su neke bile planinske samo u nazivu, što je uzrokovano nedostatkom mehanizacije. Takav je i trenutačan slučaj američke 10. planinske divizije, iako ne zbog istih razloga (Sharpe, 2005). U stvarnosti su navedene postrojbe bile postrojbe lakog pješaštva, a tako su i upotrebljavane.

Od navedenih postrojbi ističe se 5. Gebirgsjaeger divizija, koja je bila specifično ustrojena za ratovanje u planinama i obučavana[39] u Bavarskim Alpama, a o svemu tomu svjedoče i specifični priručnici postrojbe[40]. Divizija se istaknula u velikom broju bitaka u planinama, poput onih u Karpatima, duž Grčke odnosno Rodopa, kod Monte Cassina te na Kavkazu. Suprotno svojoj namjeni, opremi i obuci divizija je korištena i u klasičnim sukobima[41]. Jedna situacija iz ratnog puta 5. Gebirgsjaeger divizije bit će detaljnije razrađena u nastavku, a riječ je o napadu na Metaxasovu liniju, obrambenu liniju na granici Grčke i Bugarske.

Metaxasova linija protezala se duž granice Bugarske i Grčke, na planinskom području Rodopa, i bila je sastavljena od niza utvrđenih položaja, tunela i promatračnica. Držala ju je Grčka 2. armija. Napad na Metaxasovu liniju bio je dio šire operacije *Marita*, kojoj je cilj bio osvojiti Grčku i tako zaštititi bok predstojećem napadu na SSSR.

Prilikom priprema za napad, divizija je dobila nadimak „Planinske koze" zbog vještog dovlačenja streljiva i topova na padine ispod neprijateljske linije. Navedeni topovi bili su sastavni dio postrojbenih sredstava. Ujutro 6. travnja 1941. godine napad je započeo topničkom i zračnom pripremom, no linija je gotovo u potpunosti izdržala pa je tako predstavljala velik izazov napadačima. Unatoč teškom terenu i velikom neprijateljskom otporu, planinsko pješaštvo

39 Za detaljniji prikaz ustroja i programa obuke pogledati u Sharpe (2005).

40 Na razinu uvježbanosti za planinsko ratovanje upućuje činjenica da je u priručnicima prepoznata i vrlo istaknuta važnost detaljnog i pažljivog planiranja i pripreme (Sharpe 2005).

41 Misli se na bitke u ravničarskom, odnosno neplaninskom području, gdje je divizija korištena kao lako pješaštvo te se više puta iskazala, iako se takva uporaba protivi doktrini. Koristila se i u ekstremno hladnim područjima.

uspijevalo je zauzimati neprijateljske položaje pojedinačno, kombinacijom jakih izravnih i neizravnih vatri i brzog manevra obuhvata, uz korištenje neočekivanih smjerova napada, što i danas čini temelj napada u planinskom ratovanju. Sljedećeg dana linija je probijena, a 9. travnja grčka 2. armija bezuvjetno se predala. Teška bitka plaćena je životima 160 pripadnika 5. Gebirgsjaeger divizije.

Divizija je imala velikih gubitaka, no pitanje je bi li gubitci bili još veći da nije bila riječ o specijaliziranoj planinskoj postrojbi, što potvrđuje primjer 125. pješačke pukovnije, koja je pojačala 5. Gebirgsjaeger diviziju u spomenutoj bitci, a nakon probijanja je imala tolike gubitke da je morala biti povučena iz daljih djelovanja (Sharpe, 2005, Carruthers, 2012). Također, 72. pješačka divizija, koja se uspjela probiti kroz prolaze u liniji koje je napravila 5. Gebirgsjaeger divizija, imala je velike probleme zbog nedostatka opreme, sredstava i obuke za planinsko ratovanje.

Kao nastavak na zaključke dobivene prikazom talijanskog bojišta Prvog svjetskog rata, u ovom je prikazu opisan osnovni manevar u planinskim područjima. Također, prikazane su i poteškoće s kojima se u planinskim uvjetima susreću postrojbe koje za njih nisu specijalizirane, a to su veliki gubitci i problemi u kretanju zbog nedostatka opreme, oružja i obuke.

10. planinska divizija (vojska SAD-a)

10. planinska divizija istaknula se u bitkama duž Apeninskog poluotoka, poput operacije *Encore*[42]. Postrojba je bila specifično ustrojena i obučena za planinsko ratovanje, a upravo se u takvim operacijama i najviše istaknula. Međutim, više je posebitosti vezano uz samo osnivanje i nastanak postrojbe, čime se ona ističe od ostalih postrojbi i otkriva jedan novi aspekt planinskog ratovanja.

U tijeku Drugog svjetskog rata prepoznat je doprinos specijaliziranih planinskih postrojbi oružanim snagama Trećeg Reicha. Prema Rottmanu

42 Za detaljniji prikaz operacija 10. planinske divizije, a i sveukupni prikaz mediteranskog područja operacija vidi Fischer (1993).

(2012), porazi Britanaca u Norveškoj i Talijana u Albaniji uz ostalo su plod nedostatka specijaliziranih planinskih postrojbi, pa je pokrenuto ubrzano ustrojavanje specijalizirane planinske postrojbe.

Veliku ulogu u ustrojavanju navedene divizije odigrali su American Alpine Club i National Ski Association, dvije organizacije civilnog društva. Navedene su sudjelovale preporukama, istraživanjima i testiranjima opreme, a 1941. godine National Ski Association postaje i službeni savjetnik američke vojske, što predstavlja vrlo neuobičajen potez, pogotovo u to vrijeme[43]. Zbog potrebe za brzim ustrojavanjem zaključeno je kako je lakše profesionalnog skijaša ili alpinista pretvoriti u vojnika nego obrnuto. Stoga su se u navedenu postrojbu mogli prijaviti samo iskusni skijaši ili alpinisti iz skijaških klubova, skijaških škola ili lokalnih patrola za pretragu i spašavanje koje je onda preporučivala još jedna organizacija civilnog društva – The National Ski Patrol, a selekciju je provodio već spomenuti National Ski Association. Studija ustrojavanja 10. planinske divizije prikazuje jednu drugu posebitost planinskih postrojbi, a to je dugotrajnost obuke i privikavanja na boravak u planinskim područjima. U prethodnoj studiji vezanoj uz 5. Gebirgsjaeger diviziju, problem privikavanja riješen je ustrojavanjem postrojbe od ljudstva koje je podrijetlom iz planinskih područja, a isto rješenje prilikom ustrojavanja planinskih postrojbi koristile su i Italija i Austro-Ugarska Monarhija. Kako navodi Rotman (2012), tehničke vještine poput penjanja s naoružanjem bile su zahtjevne i za pojedince s prethodnim iskustvom penjanja, a za pojedince bez iskustva obuka bi zahtijevala previše vremena. Stoga su se oružane snage Sjedinjenih Američkih Država odlučile na spomenuti pristup ustrojavanju. Navedeno svjedoči o dugotrajnosti ustrojavanja specijalizirane planinske postrojbe te zahtjevnosti i dugotrajnosti obuke.

43 Danas je česta suradnja civilnih udruga s vojnim organizacijama, što se i vidi iz primjera NATO preuzimanja klasifikacije stijena od UIAA-a. Međutim, isto se ne može reći za razdoblje Drugog svjetskog rata.

Operacija Anaconda

U prethodnim su studijama prikazane postrojbe ustrojene i obučene za planinsko ratovanje pa se može naslutiti što se može očekivati od postrojbi koje se nađu u sukobu na planinskom području a tome nisu namijenjene. Detaljnije će to prikazati kratki prikaz operacije *Anaconda*.

Operaciju *Anaconda* američka vojska vodila je protiv Al Qaide, a u njoj je sudjelovala i već spomenuta 10. planinska divizija, u proljeće 2002. godine. Operacija je provedena u dolini Shah-i Kot, provincije Paktia, a planine koje okružuju navedenu dolinu dosežu visine oko 3300 m. Operacija je trebala biti provedena u tri dana, ali provedena je u sedamnaest dana (Kugler, 2007). Cilj joj je bio ostvariti dominaciju nad dolinom Shah-i Kot – a dominacija nad dolinama u planinskim područjima moguća je samo zauzimanjem okolnih vrhova – te uhvatiti ključne pripadnike Al Qaide za koje su postojale informacije da su tamo smješteni.

Međutim, snage nisu bile spremne za takvu operaciju. Sudionik i prvi dočasnik voda iz operacije Roth (2018) navodi kako je obavještajna priprema bila vrlo loša, a nisu imali ni podatke o lokaciji neprijatelja. Kompletni je sastav snaga ustrojbeno, obučno i u pogledu opremljenosti bio neprilagođen i nespreman za provedbu takve operacije. Isti prvi dočasnik također navodi kako je izostala i aklimatizacija, a da je teret na leđima pojedinih vojnika iznosio i po 57 kg. Dogodili su se i drugi propusti koji su, uz navedene, utjecali na provedbu operacije. Acosta (2003) tvrdi da haubice 105 mm nisu dopremljene jer se vjerovalo da će biti preteške za transport. Također, navodi i kako je zbog terena procijenjeno da je povećana opasnost od noćnog leta, što je rezultiralo time da su vojnici helikopterima letjeli u zoru, a ne pod određenom zaštitom od uočavanja koju pruža mrak.[44] Iako nakon operacije američki general Tommy Franks navodi kako je operacija bila nevjerojatan i potpun uspjeh (Franks, 2004), vjerojatno je ishod mnogo bliže onome što navodi Hersh (2004), a to je da je operacija bila loše planiran debakl, praćena pogibijom koju je bilo moguće izbjeći te da su svi ključni vođe Al Qaide, zbog čijeg je hvatanja operacija i pokrenuta, uspjeli pobjeći.

44 Za više razloga neuspjeha pogledati Kugler, Baranick, Binnendijk (2009).

Očito je kakve su pogreške proizišle iz nerazumijevanja specifičnosti rata u planinskim područjima. Nedostatak specifične planinske obuke rezultirao je nepoznavanjem odlika planiranja operacija u planinskim područjima i nespremnošću za provedbu operacija u planinskim područjima. Tvrdnju čvrsto dokazuje činjenica pogrešne procjene trajanja operacije (3 dana – 17 dana) te dopreme haubica, koje trebaju biti korištene za zaštitu manevra snaga od protivnika koji na dominantnim položajima, odnosno vrhovima ima prednost motrenja i djelovanja vatrom. Također, vojnici nisu bili aklimatizirani i ostavljeni su s previše tereta. Uz to, piloti koji nisu obučeni za let u takvim uvjetima, nisu mogli letjeti po mraku. Upitna uspješnost operacije *Anaconda* prikazuje što se događa onima koji zanemaruju specifičnosti planinskog ratovanja i ističe važnost tradicije planinskog ratovanja, koja se ogleda kroz postojanje specijalizirane planinske postrojbe, obučene i opremljene za planinsko ratovanje, s funkcionalnim sustavom naučenih lekcija koje redovito unaprjeđuju doktrinu.

Zaključak

Sukladno fazama povijesti planinskog ratovanja, prisutno je ili završava razdoblje pada interesa za planinskim ratovanjem. Upravo zato zadnja studija slučaja prikazuje operaciju koju su u planinskom području provele postrojbe neobučene i nespremne za planinsko ratovanje. Iz njihovih se postupaka očituje nerazumijevanje specifičnosti planinskog ratovanja i manevra na planinskom području. Nije iznenađujuće da je rezultat operacije bio poražavajući. Planinsko ratovanje vodi se u nepogodnim terenskim i vremenskim uvjetima, koji imaju utjecaj na ljude, oružja i opremu. Stoga postrojbe moraju biti konkretno obučavane i opremljene te ustrojene na odgovarajući način, a isti zaključak donosi Malik (2004) te Bartles i Grau (2011).

Ustrojavanje i obuka postrojbi za planinsko ratovanje iziskuje mnogo vremena, što je vidljivo iz primjera 10. planinske divizije. Stoga su primijenili inovativan način ustrojavanja koristeći civilnu ekspertizu i uz promijenjenu premisu, koja govori da je od skijaša ili alpinista lakše napraviti vojnika nego obratno. Navedena se divizija brzo istaknula kao elitna, no nažalost interes nije bio dugog vijeka.

O manevru u planinskim uvjetima svjedoči prikaz 5. Gebirgsjaeger divizije. Neprijatelja na dominantnom terenu moguće je pobijediti samo kombinacijom jakih izravnih i neizravnih vatri te manevrom obuhvata iz neočekivanog smjera, kao što je to činila 5. Gebirgsjaeger divizija. Navedeno su u operaciji *Anaconda* koalicijske snage zanemarile.

Talijansko bojište prikazano je kao svjedok planinskog ratovanja u pravom smislu riječi. Radilo se o pravom planinskom području s ekstremnim vremenskim i terenskim uvjetima, a u borbi su sudjelovale postrojbe namijenjene planinskom ratovanju. Primijenjen je i jedan drukčiji model ustrojavanja planinske postrojbe, a primijenile su ga njemačke oružane snage za osnivanje svoje postrojbe planinskog pješaštva. Na kraju, na tom je bojištu postignuta i odlučujuća pobjeda. Tragovi i postignuća ovog sukoba vidljivi su i danas u obliku položaja i cesta za opskrbu.

Iz svega navedenog vidljivo je da je za ratovanje i uspjeh na planinskom području važna tradicija planinskog ratovanja. Ona se ogleda u postojanju specijalizirane postrojbe za planinsko ratovanje odnosno planinskog pješaštva i njihove specifične selekcije i obuke te uspostavljenim sustavima naučenih lekcija kojima će se ta postrojba dalje razvijati u doktrinarnom smislu. Selekcija ljudstva predstavlja vrlo važan faktor. Pravilna selekcija će skratiti vrijeme obuke, ali čak i ako vrijeme nije ograničeno, selekciji ne opada značaj jer planinske postrojbe zbog specifičnih uvjeta djelovanja zahtijevaju i specifično ljudstvo. Obuka je najvažniji i jedini faktor koji može osigurati uspjeh u operacijama planinskog pješaštva. Ona će biti dugotrajna, što je vidljivo i iz studija slučaja, ali je jedino što može pripremiti ljudstvo na sve specifičnosti rata na planinskim područjima. Važan su pokazatelj tradicije i škole planinskog ratovanja, koje svakako pridonose daljem razvoju. U tom smislu, dobro obučeno ljudstvo, organizirano i opremljeno za provedbu operacija u planinskim područjima jedino su što ozbiljne oružane snage mogu poduzeti u kontekstu rastuće važnosti operacija u planinskim područjima.

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Osvrt

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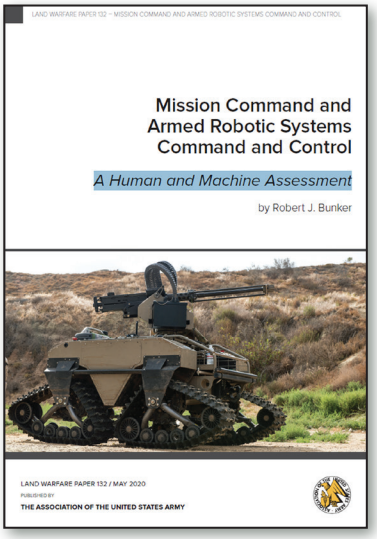
Robert J. Bunker (2020) Mission Command and Armed Robotic Systems Command and Control - A Human and Machine Assessment, Land Warfare Paper 132 / May 2020, The Association of the United States Army, Arlington, 23 stranice, otvoreni izvor dostupan na stranici: https://www.ausa.org/sites/default/files/publications/LWP-132-Mission-Command-and-Armed-Robotic-Systems-Command-and-Control-A-Human-and-Machine-Assessment.pdf



U ovom osvrtu željeli bismo skrenuti pozornost na monografiju dr. Roberta J. Bunkera, docenta na Strategic Studies Institute, koji se nalazi u sastavu U. S. Army War Collegea, i predavača na Safe Communities Institute, University of Southern California. Njegova područja znanstvenog rada obuhvaćaju: povijest, politologiju i antropologiju, u kojima je objavio više od pet stotina publikacija. Značaj je ove monografije u tome što povezuje dva ključna dokumenta: „Third Offset Strategy" (Ellman et al., 2017), konkretno „Cyborg Soldier 2050: Human/Machine Fusion and the Implications for the Future of the DOD" (Emanuel et al., 2019) i doktrine neizravnog zapovijedanja „ADP 6-0 Mission Command – Command and Control of Army Forces" (Department of the U. S. Army, 2019).

Strategije protuteže (engl. *offset strategy*) podrazumijevaju asimetrični strategijski pomak prema alternativnim sposobnostima kako bi se

kompenzirao nedostatak u simetričnom strategijskom sukobljavanju. Prvi takav pomak (engl. *offset*) napravila je administracija predsjednika Eisenhovera pedesetih godina prošlog stoljeća kad se sovjetskoj brojčanoj nadmoći odlučila suprotstaviti asimetrično – nuklearnim odvraćanjem, umjesto simetričnog odgovora – povećanja vlastitih konvencionalnih vojnih snaga. Takozvani „drugi offset", druga protuteža, odvijala se postupno, tijekom druge polovice sedamdesetih do kraja hladnog rata, kad su Sjedinjene Američke Države još jednom asimetrično odgovorile na brojčanu nadmoć oružanih snaga tadašnjeg Varšavskog pakta – kroz sveukupnu tehnološku nadmoć NATO borbenih sustava i sustava borbene potpore. Načela trećega strategijskog pomaka postavljena su u Nacionalnoj obrambenoj strategiji Sjedinjenih Američkih Država iz 2018. godine (DoD, 2018), u kojoj se ističe značaj naprednih autonomnih borbenih sustava.

Pojam „neizravno zapovijedanje" koristi se na Hrvatskom vojnom učilištu „Dr. Franjo Tuđman" kao prijevod njemačkog pojma *Aufftragstaktik* (Goluža, 2006) i američkog *Mission Command* (Filjak, 2019). Za razliku od izravnog zapovijedanja, kod kojeg zapovjednik striktno zadaje podređenom način provedbe zapovijedi, kod neizravnog zapovijedanja od podređenog se očekuje pronalaženje načina kako provesti zapovijed i njezina decentralizirana provedba, primjerena trenutnoj situaciji, ali koja mora slijediti zapovjednikovu namjeru u provođenju konkretne operacije. Na taj način oslobađa se velik kreativni potencijal podređenih postrojbi i istodobno im se značajno ubrzava OODA ciklus[1] i posljedično učinkovitost u provedbi vojnih operacija. Neizravno zapovijedanje službena je doktrina kopnene vojske SAD-a još od 2003. godine, kad se pojavila prva inačica FM 6-0, koja je zamijenila dotadašnju doktrinu vojnih operacija FM-100-5, a revidirana je 2019. godine.

Uvođenjem autonomnih borbenih sustava u operativnu uporabu postavilo se pitanje u kojoj se mjeri borbenom stroju smije dopustiti samostalno djelovanje. Ostavljanjem vojnika unutar OODA petlje praktično se prenosi njegovo

1 OODA; engl. *Observe – Orient – Decide – Act*, koncept procesa borbenih operacija koji je predložio američki brigadir John Boyd (1927. – 1997.), a sastoji se od neprekidno ponavljajuće petlje postupaka opažanja, orijentacije, donošenja odluke i djelovanja.

djelovanje u drugu točku prostora, na mjesto koje je čovjeku nedostupno ili opasno. Odlučivanje i djelovanje mora slijediti važeća pravila borbenog djelovanja, a cijeli proces predstavlja daljinsko upravljanje borbenim ili izvidničkim sustavom. Primjer takvih sustava su daljinski upravljane besposadne letjelice ili improvizirani zemaljski izvidnički roboti na koje je montirano razno streljačko naoružanje i koje potpuno slijede upute čovjeka. Stalno i izravno daljinsko upravljanje najsličnije je klasičnom borbenom djelovanju čovjeka protiv čovjeka i može se potpuno uklopiti u postojeće doktrine, ratne običaje i ratno pravo. Međutim, time se gubi prednost automatiziranih sustava u obavljanju dugotrajnih i ponavljajućih poslova, kao što je navigacija na dugim rutama. Postavljanjem vojnika na OODA petlju, stroju se prepuštaju upravo ti poslovi, odlazak i povratak u područje operacije, traganje i ciljanje, dok o neposrednom djelovanju odlučuje čovjek. U ovom slučaju strojevi tek djelomično slijede upute čovjeka, rasterećuju ga zamornih i dugotrajnih poslova i ubrzavaju OODA ciklus. Suvremeni autonomni sustavi sve se više oslanjaju na tehnike umjetne inteligencije, odnosno samostalnu adaptaciju promjenama situacije i donošenju brzih i odgovarajućih odluka. U tim slučajevima čovjek se može postaviti i izvan OODA petlje, odnosno može se dopustiti potpuna autonomija borbenog stroja. U nekim slučajevima ovaj je koncept opravdan i superioran ljudskom OODA-u, npr. u proturaketnoj zaštiti oklopnih vozila brodova i letjelica, kad je ugroza nedvosmislena i prijeko je potrebno najbrže moguće djelovanje.

Na prvi pogled, spajanje načela neizravnog zapovijedanja s vrlo brzim OODA ciklusima potpuno autonomnih borbenih sustava čini se savršenom kombinacijom, no time se otvaraju brojna i vrlo značajna pitanja morala, ratnih običaja i ratnog prava. Kako ističe autor, strojevi nemaju osjećaje empatije, moralnosti i subjektivnosti i te je osjećaje nemoguće programski emulirati. Koristeći se teorijama kompleksnih sustava, moguće je postići kolektivnu inteligenciju rojeva robota, no ona je i dalje inferiorna ljudskoj inteligenciji i oslanja se tek na prednost računala u brzini obrade informacija. Do sada, računala su uspjela pobijediti čovjeka tek u jasno definiranim okruženjima, kakvo je na primjer u društvenim igrama, poput goa, šaha ili pokera. Brzo izvođenje dobro definiranih problema i komparirane kalkulacije na temelju njihova ishoda pokazali su se superiornima u odnosu prema

ljudskom intuitivnom i konceptualnom pretvaranju strategije u taktiku (šah i go), odnosno optimalnom kalkuliranju rizika (poker). Međutim, u kompleksnim sustavima kakve karakteriziraju suvremena vojna djelovanja, ljudska domišljatost, sposobnost prilagođavanja i ustrajnost pokazuju se nadmoćnima. Čovjek je u stanju pronalaziti inventivna rješenja čak i u slučajevima kad klasična teorija igara upućuje na to da je u gubitku. Npr. izazivanjem kolateralnih žrtava, što je sasvim izgledno u uvjetima brzih OODA ciklusa potpuno autonomnih sustava, protivnik može izazvati gnjev dotad pasivnog civilnog stanovništva i osigurati priljev novih istomišljenika. Kako bi se izbjegle neželjene posljedice nekontrolirane primjene umjetne inteligencije u upravljanju borbenim strojevima, već postoje ograničenja uporabe poluautonomnih i autonomnih borbenih sustava, a najpoznatija je u tom smislu Direktiva 3000.09 američkog ministarstva obrane (DoD, 2012,2017).

Autor je diskurs o primjenjivosti autonomnih sustava dalje vodio kroz sedam načela neizravnog zapovijedanja procjenjujući primjenjivost na autonomne strojeve. Samo su dva načela strojno primjenjiva jer se mogu algoritamski aplicirati i nisu emotivnog karaktera, a to su kompetentnost (sposobnost da se djeluje uspješno ili učinkovito) i prihvaćanje rizika (što također može biti rezultat matematičkih kalkulacija mogućih ishoda). Zajedničko razumijevanje, kao još jedno načelo neizravnog zapovijedanja, moguće je primijeniti na strojeve samo u kontekstu logičkog razumijevanja, dok je u moralnoj domeni strojevima potpuno nerazumljivo. Sljedeća tri načela neizravnog zapovijedanja: zapovjednikova namjera, (neizravne) zapovijedi i disciplinirana inicijativa mogu se strojno emulirati samo djelomično, i to u slučajevima matematički dobro definiranih problema. S porastom kompleksnosti, kakvo obilježava suvremeno bojište, strojno odlučivanje postaje bitno lošije od ljudskog. Na kraju, načelo povjerenja nije moguće emulirati jer je emotivna kategorija i gradi se s vremenom na temelju uzajamnog iskustva.

Pored sedam načela neizravnog zapovijedanja, autor je proveo diskurs i prema sedam sklopova (tzv. *Seven Cs*, jer na engleskom jeziku svi počinju slovom C) neizravnog zapovijedanja, u kojima je pronašao samo dva primjenjiva na automatske borbene sustave: kompetencija i komunikacija.

Preostalih pet sklopova: karakter, hrabrost, privrženost, suosjećanje i povjerenje nisu primjenjivi na strojevima.

Autor izvodi važne zaključke o primjenjivosti neizravnog zapovijedanja u vojnim operacijama koje uključuju ljude i autonomne strojeve, u vojnoj organizaciji koja bi podrazumijevala podređivanje strojeva ljudima, ali i obratno. Umjetna inteligencija, na današnjoj razini računalnih tehnologija, dorasla je samo nekompleksnim okruženjima koja se mogu matematički dobro definirati. Nadalje, umjetna inteligencija strojeva nema sposobnost vođenja u ljudskom smislu zbog navedenih nedostataka u načelima i sklopovima neizravnog zapovijedanja.

Moguće je da će se s vremenom ovi odnosi mijenjati. To se može dogoditi zbog pojave prijelomnih tehnologija: kvantnih računala i raznih oblika umetaka – mehaničkih u biološke organizme ili organskih u strojeve. Istraživanja na ovim područjima još su u začetku, no pokazuju značajne mogućnosti vojne primjene. U svakom slučaju, na bojištu se do 2050. mogu očekivati tri vrste boraca: ljudi, strojevi i strojno ojačani ljudi. Stoga autor na kraju ove monografije preporučuje istraživanja i razvoj u sljedećih šest smjerova: razvoj novih C2 modela koji uključuju kolaboraciju ljudi i strojeva kao autonomnih entiteta, dalji razvoj umjetne inteligencije, razvoj modela povjerenja i predvidivog ponašanja u mješovitim ljudskim i strojnim skupinama, istraživanjima optimalnih ustroja mješovitih postrojbi ljudi i strojeva, razvoj koncepta operacija koje uključuju ljude i autonomne strojeve te provođenje simulacija, vježbi i ratnih igara u kojima bi se prethodna istraživanja mogla empirički provesti.

Ova monografija dr. Roberta J. Bunkera jedan je od najcitiranijih recentnih radova iz područja vojnog umijeća i preporučujemo je svima koji se zanimaju za suvremenu vojnu misao, a posebno za istraživanja iskustva i perspektiva neizravnog zapovijedanja te primjene umjetne inteligencije u autonomnim borbenim sustavima.

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