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UNIVERSITATEA NAȚIONALĂ DE APĂRARE
„CAROL I"

EDITORIAL

DIVERGENCES IN THE CONVERGENCE OF THE CONTEMPORARY GEOPOLITICAL DEVELOPMENTS

Fundamental changes in the security environment and the dynamics of the major events in the global security plan show that the current model of organizing the world has reached a point where essentially it involves transformations. The transition from one model to another is done with great difficulty, while the reference interests of actors, be they state or non-state, are deeply divided.

Three hot spots on the world map, generated by the conflict in Ukraine, the Islamic State and the referendum held in Greece for accepting or not by the population of this country of austerity measures imposed by the Troika (IMF, European Central Bank and European Union), are signs of a shift to a possible new model for organizing the world. The great test of the current systemic model is given by its ability / inability to avoid violence as its worst: war.

Ukrainian crisis is a blatant denunciation of the systemic post-Cold War order. Russia, through the actions they carry out and by the means used, is turned on to change the current model of organization and management of the world and gain a privileged place within it. By annexing the Crimean Peninsula and the destabilization of eastern Ukraine, Russian Federation seeks not only to prevent EU and NATO orientation of this country, but, at the same time, it argues, builds and reinforces another geopolitical role, which would allow its forces design south to the Mediterranean and beyond.

Ukrainian crisis has reached today a highly sensitive point in which it is not excluded the possibility / probability of war between the players, but, at the same time, prospects are open for a peaceful settlement. If it ends by war, the historical reality is confirmed through the fact that in the Westphalian system the systemic order was always changed by war. If it ends peacefully, then we are dealing with a theoretical acquisition extremely important, namely that in the nuclear age, a rational management of systemic crises can avoid the hegemonic war meant to change the global order.

On the other hand, the perpetuation of a state of distrust and interfaith hatred in a complex geopolitical environment affected by numerous conflicts, Middle East, and the promotion of discretionary domestic policies by governments in Damascus and Baghdad have fueled tensions between different etnico-religious communities, tensions between Sunni and Shia manifested the most intense, with high impact at regional level. The intense unrest of recent years in Syria and Iraq has generated socio –political and security vacuums that constituted a fertile ground for the emergence and rapid development of Sunni jihadist militancy that found significant support in local communities, dominated by the hostile feelings addressed to power. The most notable case in this context is the emergence and evolution of the "Islamic State of Iraq and the Levant".

The rapid expansion of the area of action of the Islamic State in Iraq and Syrian territories was intensified by the high level of regional instability and the inability of the two nation-states to exercise control within their borders. By exploiting and exacerbating such conditions, the Islamic State was able to strengthen its military power to attract many followers and a large number of foreign fighters of different nationalities, taking over at the same time, huge financial and material resources enabling it to attack the challenged foundation of the global systemic order.

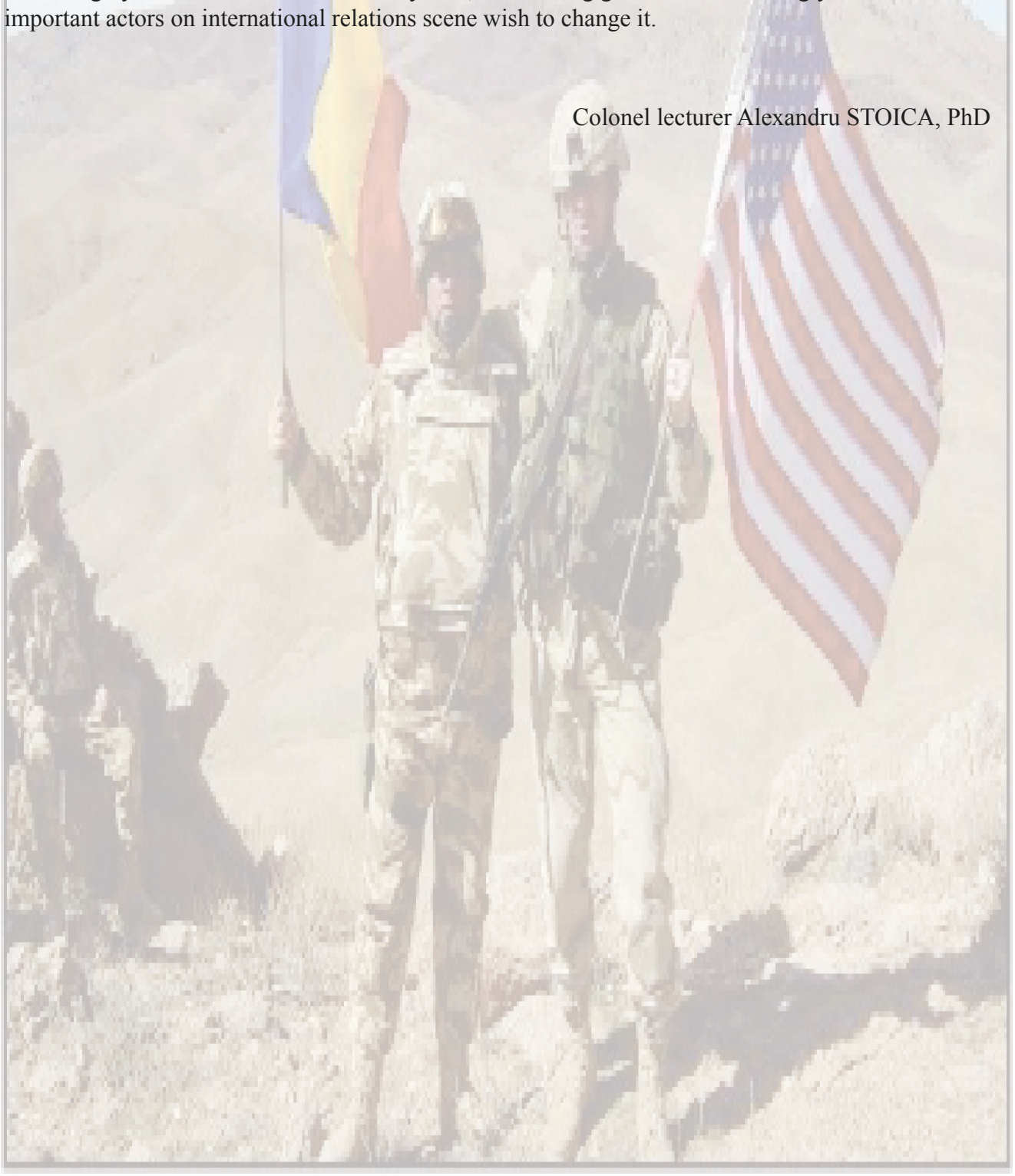
The Greek crisis contributes to weakening the architecture of the international financial system and to amplify the systemic problems of the contemporary world. Today one can no longer talk of a usual financial crisis, the kind of which Greece went through over its history after gaining independence from the Ottoman Empire in the first half of the nineteenth century. This crisis was exacerbated by the

decision of the leaders in Athens to appeal to a form of direct democracy by convening and holding a referendum but also by its results, which could throw the European Union in particular and the world in general, in an unprecedented situation if they do not try to find a solution acceptable to all parties.

Basically, the rejection by the Greek people of the austerity measures imposed by international lenders does not automatically mean a Greek exit from the European Union or the Euro zone, but certainly it requires the global financial system restructure the sovereign debt of states and their burden sharing among creditors and borrowers. Otherwise, Pandora's box being opened, the financial system will be forced to turn not to collapse.

Concluding, dramatic events such as those set out in this editorial, show us that we are dealing with a highly uncertain evolution of the system, the existing global order is strongly contested and the important actors on international relations scene wish to change it.

Colonel lecturer Alexandru STOICA, PhD



THE IMPORTANCE OF EXPERT SYSTEMS IN ASSISTING LOGISTIC DECISION

Colonel Marius MILANDRU*

Abstract: *The fast evolution of information technology has prompted significant changes in management organization, especially in the field of specific systems and processes. Consequently, the concept of management information system has emerged to signify the identification of problems and opportunities on an organizational level. An extremely important category of these information systems is represented by the systems that are used to generate decisions with the purpose of offering an interactive informational support for managers during their decision making process.*

Keywords: *military organization; logistics; logistic decision; expert systems.*

Decision making for a logistics manager implies the possession of logistic information/data that is analyzed, evaluated and processed, as well as the tracking of several alternatives to solve a particular problem, of which the optimal one is to be selected.

The use of expert systems in order to adopt logistic decisions entails a faster process and a more efficient decision making.

Systems for decision support generally use analytical methods, specialized data bases or (computer based) interactive models.

These systems are constituted on an ad hoc basis, they are dynamic and they offer managers fast, even instant, solutions.

A decision support system usually has the following components:

-hardware elements;
-software elements;
-human resources;
-specific data;
-a processing model.

As a definition, an expert system is the program which allows to split the declaratory knowledge, this being declared in the terms of propositional calculation, from procedural knowledge which is used in the algorithm of processing those knowledge.

In essence it can be said that this is the main principle of making programs based on propositional calculation forms.

As a rule the elements of an expert system are the following:

• acquiring knowledge – represents the mechanisms of taking the knowledge from a human expert (part named EXPERT) in a strictly defined domain. The scope of acquiring the knowledge is to allow building a knowledge data base, which is a static process, the same with the process of collecting data for a data base (materials stocked in the military units depots, procured materials, etc.);

• representing the knowledge – defined mechanisms and processes of knowledge formalization (in therms of formal logic) in order to implement those as a data structures (knowledge data base) in a physical system of automatically processing data;

• processing the knowledge – is the procedure of using an artificial reasoning to a data base, the scope is to adjust the logistic system inside military organisation;

• utilising the knowledge – has the role of responding to operator requests, which are requests of utilising the logistic information (quantity and types of food used for a military exercise, type and quantity of goods which has to be sold)inside military organisation.

As a particular case we will present an expert system which can be utilised in the process of assisting the logistic decision, this being know as *EXSYS*.

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This is a product of an American company and it was launched in 1989, the newest version is *EXSYS Professional* and it is working in graphical modes controlled with WINDOWS 95, NT, Presentation Manager şi X-Windows.

EXSYS-ul has two main elements:

- the generator or the editor of production rules to create / modify a data base;
- RUNTIME component or "for consulting" which allows to use the newest data base created;

EXSYS can be defined as a convivial generator, elaborated for IBM's PC/PS which operates with rules of IF-THEN-ELSE type.

The rules editor works with rules already edited which can be modified or erase, in all cases, EXSYS is capable to verify and validate the rules during the time when are introduced in data base.

Tied with the process of acquiring knowledge, the fast prototype of this generator can be used if you follow these steps:

buying the EXSYS Professional software;

establishing / identifying the logistic domain and its expert;

editing the production rules, on paper, using the human expertise;

editing the rules with EDITXS component;

- realizing the demonstrative prototype for expert system which executes the most important function of logistic problem or which offers a good entry solution;
- creation, testing and evaluation of data base;
- obtaining of expert feed- back in logistic domain and implementing his expertise to improve the rules;
- editing the data base to include all expert improvements and expertise until expert system will execute everything is wished;
- elaborating the instructions for the new created system;
- nstalling the system to operator and training the personnel, followed by necessary maintenance.

The rule of production in EXSYS Professional has 6 components, as it follows:

- IF <premises>;
- THEN <conclusion-1>;
- ELSE < conclusion -2>;
- NOTE <comment>;
- REFERENCE <comment>;
- NAME <name>.

The last four components are optional.

The IF part is created through a combination of values and qualifiers, part of THEN is created through a combination of options and probabilities, which are considered certainties.

EXSYS offers 6 methods for certitude factors : Yes/No, [0,10], [-100, +100], Incr / Decr, Costum Formula şi Fuzzy.

The left limits of each interval represents absolutes incertitude, those from the right mean absolute certitude and intermediary values indicates certainties factors which recommends action, those three natural statuses being a characteristic of logistic decision.

Inside a rule, if all the conditions are true, then the conclusion is true, fact which determines to take the rule in the attention of interference engine for execution.

The sentences from IF part, as other also are sentences in English, Romanian or even mathematical expressions. The THEN and ELSE parts contain possible solutions, from which EXSYS can select.

The solutions are represented through a sentence follow by the probability written with *Confidence*=<n> syntax, where <n> is a value from a scale, as an example: 8/10, 5/10 etc., if use scale from 0 to 10.

In the moment when expert system finds the solution to the logistic problem, it displays a list (in decreasing order of attached probability) of possible solutions.

For developing and utilising an expert system (in suplly, maintenance or services) the specialist has to know standard operating procedures, as it follows:

- the procedure of creation data base (introducing the qualifier, the values, creation of IF THEN and ELSE parts, creation of NOTE part – optional, REFERENCE and NAME parts, visualisation of created rule);
- the procedure of adding variables (introduction of variable name, introduction of a text for variable function), the way which will be displayed the variable at the ending session of consulting);
- he procedure of editing / modifying a rule;
- he procedure of moving a rule, which is realised through the same operations: selection at beginning, selection at ending and introduction of rule number in front of those which it will be moved;

• procedure of erasing a rule which is realised through operations : introducing the number rule after operation Delete Rule, then YES to confirm the erase;

• the procedure of printing for an expert system;

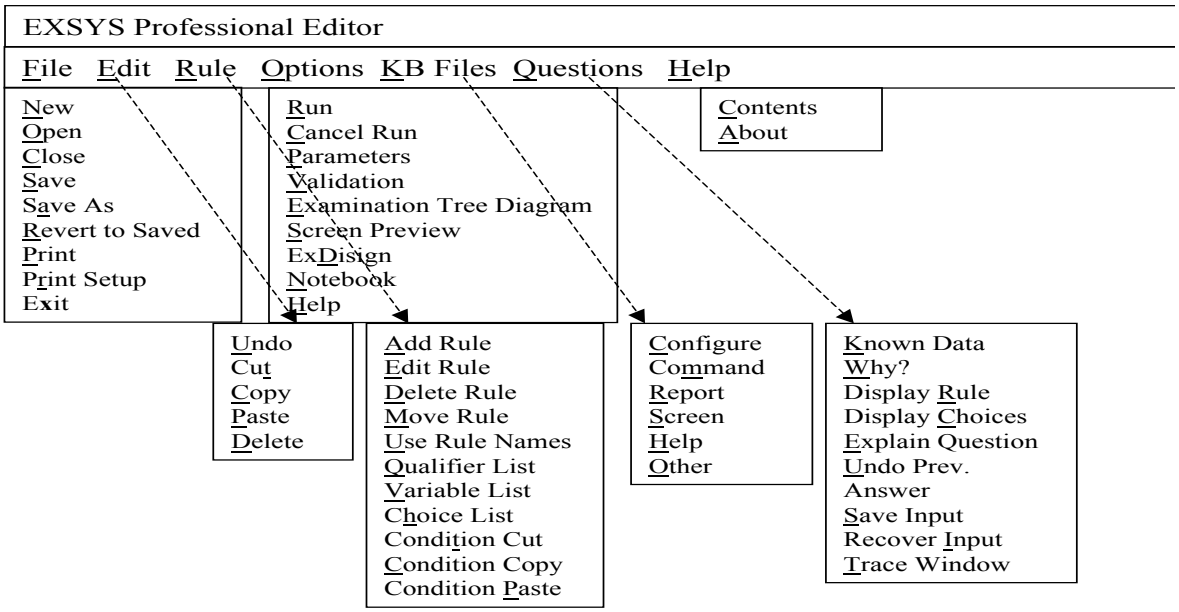
• the procedure of execution (consulting) for the new created expert system with operations : launching in execution of EXSYS Professional generator, calling option File/Open, selecting the execution data base, selection of option Options/ Run;

• the procedure of saving and escaping from expert system generator;

• the procedure of finding a data base is the same with the command used at creation with the difference that instead of File/New, File/Open will be used.

The menu and under menu structure after opening an EXSYS data base is represented in the next figure:

The knowledge of the important concepts is recommended in order to develop an expert system through the EXSYS Professional generator.



Expert systems generated with the EXSYS Professional contain individual facts embedded into knowledge constructs for decision making representing knowledge by the method of *rules of production*. These rules are shaped as IF-THEN-ELSE, but the most commonly used form is IF-THEN.

The purpose of using these expert systems is to reach a conclusion, find a solution or take a decision. The EXSYS Professional term for these conclusions/recommendations is the concept CHOICES (alternatives-aims).

In the previous examples "***Decrease acquisition price for fuel***" and "***Increase acquisition price for fuel***" represent CHOICES for the expert system and they are positioned in the THEN/ELSE part.

When employing rules in order to obtain conclusions/recommendations, answers are necessary as they are taken over by users through specialized interfaces or through interfaces with other external programmes. Thus, this knowledge of the system is stored and, subsequently, evaluated by using the rules.

In cases when the condition in the IF part of a rule is true, the knowledge concepts corresponding to THEN are activated. In an opposite scenario the ELSE part is activated with its corresponding knowledge concepts. In cases when the ELSE part does not exist, the next rule in the decision tree will be considered.

The EXSYS generator uses two types of facts (concepts/situations of knowledge): *qualifiers* and *variables*.

Qualifiers are known as the concepts of knowledge that allow the user to select one or more figures from a list predefined by the team of experts and the cognotician.

The general rule is that when a qualifier is created the concept of knowledge is conveyed as a text that ends in a verb.

For instance, if we develop an expert system in order to determine the maintenance capacity of a

logistics base, it will have to contain information on the level of technical resources.

Thus, we have to create a qualifier shaped as: "***the maintenance capacity is:***"

1. very good;
2. good;
3. satisfactory;
4. unsatisfactory.

The text "***the maintenance capacity is:***" constitutes the body of the qualifier and the types of capacity 1, 2, 3, and 4 represent the values rendered to it.

We need to mention the fact that the technique of using qualifiers is very frequently used in the creation of expert systems because it allows the reception of answers from the user in a rapid and unitary manner contributing to a remarkable flexibility in expert system development.

Variables will allow the user to introduce numbers or rows and they can be adopted by specialized interfaces from program-products/ external applications or even Hypertext elements. It is necessary for any newly created variable to be previously defined. The application of this procedure is important because the describing text is taken over and presented to the user as the completion of the standard message "Please input a value for the variable". The name of a variable is written between straight brackets and the attached message explains this name.

For the field of logistic services (catering, equipment, etc.) we are going to present examples of qualifiers that refer to the lifespan of a product.

The *Body* of the qualifier is "***The life cycle is"***, and its values could be: 1. launching; 2. increase; 3. maturity; 4. decrease; 5. don't know.

According to this example the qualifier looks like this:

"***The life cycle is"***:

- launching;
- increase;
- maturity;
- decrease;
- don't know.

The use of expert systems in logistic decision making is recommended in peacetime and in other situations, especially in the field of services, procurement and transportation.

The main argument in its favour is that military units/battalions have already created data bases which can be partially completed or updated through the Internet.

In order to consolidate logistic decision making, these systems can be implemented in most fields of logistics, some examples where these systems are already being put to use are logistic bases/ support battalions, respectively, through the public acquisition structures with the development of the marketing function.

We consider that the implementation of information technology on the level of logistic structures offers managers numerous advantages, some of which are the following:

• a faster process of decision making, that can serve as a reference model applicable to the functional domains of military logistics;

• the increase of quality in decision making;

• the possibility of trial and simulation of possible alternatives;

• the development of the informational flux through the optimization of procedures: logistic actions- information- logistic decision;

• the accomplishment of logistic objectives through the increase of management performance.

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MILITARY PRODUCTION IN ROMANIA DURING THE COMMUNIST ERA AND ITS EFFECT ON THE ORGANIZATIONAL CULTURE

Toma PLEŞANU, PhD*
Mihai NICUŞOR, PhD**

Abstract: *This article analyzes the military production in communist Romania in terms of assimilations in the manufacturing of new or upgraded military equipment and the effect on organizational culture and on management practices used after 1989. It is also presented the effect of reorganizations and restructurings based on the principle of reducing the number of staff only, without structural changes, without reducing costs , without increasing productivity, without improving quality.*

Keywords: *management; command; military production; methodological instructions; organizational culture.*

Introduction

The year 1989 is perceived in Romania as a milestone, strictly through the events of the last days of the last month of the year. In the summer of 1989, The National Interest, a small circulation magazine devoted to foreign policy of the United States, published an article that would soon cause one of the largest intellectual debates of the post-war era.

This essay written by Francis Fukuyama, before the author being hired for a short time by the US State Department as a political analyst, was entitled "The End of History?" and treated this question quite literally. Fukuyama began presenting his controversial thesis by noting that "in world history something very fundamental happened" and that recent development - especially reform movements in the Soviet Union and Eastern Europe and worldwide spread of the consumption culture - indicates "triumph of the West, of the Western philosophy". Later, in an interview with Curierul Românesc" newspaper ("World we live in", Curierul Românesc, Year XV No. 8 (211), August 2004) academician Solomon Marcus concludes that "*Phrases like "end of history", "death of art", "end of science" were circulated in recent decades, either to force the attention of a large number of readers (and from there to purely commercial interests is only a step), or because "ends" and "disappearances" are often the way we perceive crisis periods. When an entity changes, it gives the impression that it disappears. "Identity crisis" is frequently changing the way of understanding identity. Same as "culture crisis", "literature crisis", "language crisis" etc. "End of history" is only another way of understanding history and frustration that which I have referred to may have roots in phenomena like the ones analysed by Huntington*".

The references are quite poor in presenting specific military management. Military managers, leaders of public institutions, cannot enjoy intellectual property rights of management philosophy, strategy and policy of the organization as a whole, but only the rights of being privileged individuals who conceive and propose them. These concepts are well defined and developed in the field of management theory for socio-economic organizations, in which the patrimony belongs to the organization, may be associated, in the military field, with the national security strategy, defense strategy of Romania, defense planning directives and doctrines forces or rules[1]. It is therefore difficult

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[1] Examples: Land Forces operations doctrine, Doctrine of joint actions of the armed forces, Doctrine for Joint Operations of the Armed Forces, Doctrine for Joint Operations planning, Operational planning in the Romanian Army Doctrine, Tactical doctrine of Land Forces operational units for combined military actions (multinational), FT-2 - Manual for General

to identify individual achievements, as they are often masked as "collective productions" and they do not contain, most of the time, all contributors.

Furthermore, the notion of management was not common before 1989, being substituted by terms such as organization, management, etc., and the delimitations were not clearly defined. Terms "management" and "command" are relatively close. The term "management" can be used to describe an equivalent operation in a civil organization. It is true that both "management" and "control" terms contain elements of leadership, decision and control. Management is not the same thing as management processes, which relate primarily to the allocation and control of human, material and financial resources for completing a task. They are frequently used in military organizations to improve the planning, organization and execution of operations, increasing logistical support, etc. What should be noted is that military organizations are subject to "command" and NOT "management", while using management processes.

Military production in Romania under the communist regime

Before 1989, a centralized economy functioned in Romania and the ministries of economy, together with industrial conglomerates, had as main priority the defence industry field through the National Program for Defence Industry Development, which was in conjunction with international treaties of the Warsaw Treaty and the "Council for Mutual Economic Assistance" (created at the initiative of the former Soviet Union). Taking also into account that the existing legislation, namely Order no. M23/14.05.1975 for enforcing the *"Methodological instructions regarding assimilation phases for new military technique products",* was obsolete due to the fact that it needed to comply with the new aspects of technological development brought by the "Council for Mutual Economic Assistance" and others, emerged the necessity for updated regulations regarding assimilation of new or modernized military products in our country as well.

Staff organization and operations of the Land Forces (2005), I1000 series instructions (I 1000.1 establishing mission needs and operational requirements issuing, I 1000.2 Instruction regarding defense procurement management), Guide for technical supply of armored cars and tractors, STPM M 40546-99 standard, Systems engineering, Policies and procedures; General military terminology, etc.

In this regard, the Ministry of DEFENCE had the necessary structures to implement these updated regulations regarding assimilation of new or upgraded military equipment, respectively command centers and central directorates with responsibilities for procurement, through scientific councils existing in these structures. The Ministry of DEFENCE also had a Department for Military Production and Army Procurement which, in turn, had a Technical Direction for Military Production Tracking and Control.

This situation led the ministries of economy, together with the Ministry of DEFENCE, to issue the Order no.M54/14.12.1987 in order to enforce the new *"Methodological instructions regarding assimilation phases for new military technique products".*

M54 instructions were referring to the assimilation methodology related to the manufacturing of new or upgraded military equipment inside the national economy and the research and production units of the army. We can mention that the existing research and development capabilities were very high, the specialized workforce being trained through the technical colleges of the Military Academy, now known as the Military Technical Academy.

"New product", as described by M54 instructions, meant any military product that was manufactured for the first time in Romania, having superior technical and functional characteristics than the existing ones manufactured or used by the army, ***comparable with the achievements of economically advanced countries.***

"Modernized product" meant an existing product, either used or manufactured (usually with soviet origin, or manufactured under license in the Warsaw Treaty countries), which was to be totally or partially redesigned, to be able to apply new and more efficient technologies in the manufacturing process or for achieving better technical, functional and economical characteristics than similar products used, from current production or imported.

In the process of new products assimilation or upgrades for aeronautical military technique, the Direction of Industrial Control for Aeronautical Products Quality Assurance was also involved under the Decree no. 5/1982.

New or modernized products could only be assimilated into fabrication only based on own

scientifically research, reference models or license documentation.

In special cases, for highly technical or complex products, assimilation could have occurred through cooperation with institutes or factories from other countries.

The specific method to be used to assimilate or modernize military products as described above was proposed, on case by case basis, through order documents or special programmes and was approved altogether.

The assimilation of new or modernized products, normally, went through multiple phases as follows:

a) preparation, consent and approval of the research and design project;

b) preparation, consent and approval of the product order document;

c) scientific research, development and approval of the prototype (for ships only the ones that had this phase documented in the research and design project);

d) preparation and approval of the basic documentation for prototype implementation;

e) execution, trials and homologation of the prototype;

f) finalization of documentation for the first series, development and acceptance for preparing the first series manufacture;

g) finalization of technical documentation for mass production and beginning the manufacture process.

The activities described in subparagraphs a and b were coordinated and funded by the Ministry of DEFENCE, the arms commands and central directions – entities responsible for army endowment. The themes of research and design for parts, aggregates and subassemblies of the basic products were prepared and funded by economic ministries that had the task of assimilating the products.

The activities referred to in subparagraphs c and g were coordinated and funded by the economic ministries which had the task of assimilation according to existing laws, ensuring phases and deadlines compliance as stipulated in the National Program for Defence Industry Development.

In this way, the production units of the army collaborated directly to the development or modernization of complex weapon systems. In addition, some of the productive sectors with special production (for defense industry) within civil enterprises were often driven by military engineers usually graduates of the Military Academy. This led to interference of specific military production facilities command systems with management systems of civil production units.

Organizational culture and management practiced after 1989

After 45 years of centralized management, in 1990, the entire activity of management was based on the following beliefs:

- all critical issues arising from the interaction with the external environment of the organization were the sole responsibility of higher hierarchical levels. As a result, management was absolved of strategic management responsibility, being fully oriented to tactical problems of the organization. The inputs, outputs and even the structure of the organizational system were regulated as a whole, at national level;
- the management had total control over the members in the organization, given that, on one hand each employee had a secured position, and on the other hand, the freedom to choose their working organization was very limited;
- a manager's success largely depended on the relations with political power, rather than meting the efficiency indicators. As a result, the most important skill of the manager was to control the exchange of information between the organization and the external environment.

These beliefs reflected a set of values specific to totalitarian regimes: political power, administrative hierarchy, control of information, while innovation, quality, responsibility, respect for the client were almost completely disregarded. In these circumstances, it was no accident that many slogans emerged like: "We pretend to do the work, they pretend to pay us"; "The boss is always right"; "Who does not work does not make mistakes, and we avoid mistakes!" "Long and frequent breaks are the key to great successes!" "I didn't come to work in the factory, but to make money!" "Time passes, paychecks keep rolling, we gladly work!", reflecting a specific mentality, often labeled as "communist".

In these conditions:

- the products of this culture were always

accompanied by endless lists of "exceptions' that took weeks of labor from highly educated staff and management to draft, advocate, support, endorse and approve, without any consequences to those who were at the origin of deviations;

- services left much to be desired, "suggestions and complaints" register being just a formality;
- dirty building-houses, with broken roofs, no longer provided protection for the already poorly maintained equipment against the elements;
- inside storage facilities the products were slowly decaying and often gone "missing";
- workers, caught in the same routine, were content to work with dirty equipment, little or no protection whatsoever, no harmful gases neutralization systems and no hazard reduction measures in general;
- endless meetings at all levels took place, working visits of political leaders, no realistic strategy, file systems meant to control workers where the chief of personnel played a major role, excessive secrecy and so on;
- innovators were not able to get a patent unless their superior was co-owner of the intellectual property;
- client concept was replaced by the beneficiary concept, in other words, someone who had the privilege to benefit from the product or service.

After 1990, the situation did not change radically. First post-revolutionary government decision to restrict the role of ministries and to abolish industrial plants, with greater autonomy of enterprises, formed a cultural vacuum around managers. This contributed, along with economic and political changes, to the formation of a consciousness of crisis. In the defence industry, as in the rest of the industry, few factory directors had the courage to opt for a real organizational change, preferring immediate solutions, less risky, but ineffective in the long run. But even these compromises were most often implemented out of pure intuition rather than thorough management training.

Factory directors were still faced with the problems already mentioned, in addition, being subject to other disturbances: they were often changed or threatened with change, aggressed, intimidated by the unions and their actions, and sometimes even by some politicians or political parties.

Different actions for management modernization, such as the implementation of a quality assurance system, had to be imposed by whip. Only by the order of Endowment Department of the Army, and only after the threat of losing the Army as a client unless they become certified by the Military Association for Certification, Approval and Supervision, defence industry enterprises have moved to elaborate the required paperwork. Of course, in these conditions, in many cases formalism took their toll on all the actions. Like any measure imposed from above.

Breaking the monopoly of RA Romtehnica in the export of military equipment field in 1995, otherwise a well-intentioned action, found an unprepared defence industry. With the same unchanged products, increasingly uncompetitive prices, although basically subsidized by the state, in a large proportion, through paying technical unemployment, with an inexperienced management, concerned only with the more and more cumbersome raw material acquisition and the recovery of money from beneficiaries, underperforming marketing, usually where the employees were distributed without competition selection and with little or no knowledge of foreign languages, led, in many cases, to the loss of traditional foreign markets.

Working on the stock, taking loans to pay salaries, accumulation of unpaid debts, lack of liquidity, orders coverage under 10-15% of the production capacity, unions manipulation by the directors, which later got out of hand, to solicit orders or deferred payment, calling in excess the amendments of Law 78/95 regarding the protection of defence industry personnel, a very harmful law, paying laziness and hindering initiative, all this proves that those organizations were completely unprepared to function in a free market economy.

Engineering groups, made up from experienced specialists, who made possible the manufacture of numerous types of military goods or upgrading existing ones, were almost abolished by normal and early retirement and the departure of younger and valuable workers to other companies or abroad, through inadequate personnel management.

Overall, this type of enterprise was organized bureaucratically, after the Weber: positions with obligations and responsibilities described in detailed procedures, organized in a pyramidal hierarchy, with clear and rigid rules, same for each

person regardless of their capabilities. Much of Weber's theoretical model was, in this enterprise, often circumvented: frequently, the positions were no longer occupied based on competence; many workers become true specialists in preserving their job, cultivating the idea of "trade secrets" through which they could force gaining undeserved rights; the high amount of formalism found in the workers performance appraisal system and the corruption at the top level managers led to the promotion of incompetence.

After 1990, the tolerated system of personal activities (from making valves and seals to manufacturing different parts or subassemblies), executed during work time, became dominant, which without any accounting of the extra consumption resulted, turned into a real alternative industry.

Conclusion

The view of the directors that ran these factories over the years, being former specialists or lower level managers, promoted by the wave of political or union changes was that the organization represented, on one hand, the environment were the "functions" of the manager took place: planning, organization, coordination and control, and on the other hand, the result of the division of labor, precise delimitation of the positions, repetition of actions and standardized qualification of personnel. The company was thus reduced to "structure" and devoid of its human "content". If you had asked these managers to summarize their company, they would have presented the organizational chart with its various hierarchical levels and different functional areas. Therefore, as a result of this vision, required organizational changes were reduced to restructuring: "If you want to change the organization, change the structure."

Reorganizations and restructurings enforced, based only on the principle of reducing the number of personnel, without structural changes, without reducing costs, without increasing productivity and without improving quality, did not help to solve the serious errors of management, management that during this period had as sole achievement avoiding bankruptcy.

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THE QUANTIFICATION OF INFORMATION AND PUBLIC RELATIONS ACTIVITIES IN MILITARY OPERATIONS

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Abstract: *In public relations in military operations, the quality and opportunity of the transmitted message are elements that count and that can be quantified, constituting at the same time a leverage for the success of the operation, a means to save human lives, material and patrimony values.*

Keywords: *public relations; quantification; military operations; target groups.*

The first evaluation papers in this domain were published by the Evaluation Commission of the US Institute for Public Relations which elaborated a series of papers referring to the best practices in the evaluation of public relations activities, including a dictionary of terminology specific to evaluations and a set of directions to be followed.

The Institute for Public Relations is a prestigious international institution which, through its specialty commission, has an objective to establish the standards and methods of research and evaluation in public relations.

The bases of the public relations evaluation activity were laid at the European Evaluation Summit of the International Association for Measurement and Evaluation of Communication that took place on 8-10 June 2011 in Lisbon, the principles of evaluation assumed in Barcelona being adopted and assumed by professional organizations from all over the world.

According to the Barcelona Declaration, the principles of evaluation in the activity of public relations are:

- the importance of defining an objective and a measurement. The objectives must be defined as clearly as possible and they must answer the following questions envisaging a public relations campaign: who, what, when and what impact is expected. We must thus keep in mind that the aim and the measurement are fundamental aspects of any public relations campaign;

- media are measured both quantitatively and qualitatively. According to this principle, quality can be defined in terms such as positive, negative, neutral. The focus is placed on the way in which the message is transmitted, the reaction of the target audience at the tone of the articles, the credibility of the source, the type of media and, to a lesser extent, the number of published articles;

- the AVE (Advertising Value Equivalence) index does not represent a criterion worthy of consideration, as it does nothing but measure the cost of the media space and not the value of public relations;

- the social media can and must be measured. This principle derives from the first principle and it underlines the need for objectivity and clearly defined results for the social media. At the same time, it widens the area of analysis with polls, web searches etc and it supports the idea that evaluation must concentrate on conversations and communities, and not on simple appearances. It is important to understand the influence and degree of penetration, but the existing sources are not always acceptable, transparent or sufficiently consistent to be reliable; the keys to success are experiment and testing;

- the measurement of the consequences is to be preferred to the measurement of the results because, according to specialists, not all that matters can be counted and not all that can be counted matters. Consequences means changes in behaviour, attitude

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and understanding.

One controversial method of evaluation in the field of public relations is the Advertising Value Equivalency (AVE) method which suggests the fact that the space and time won in the media through public relations is equivalent to the same space and time paid for in the media, bought as advertising. The method is accessible and costs almost nothing, but this thing does not justify the practice as an adequate one. Research showed, for example, that the editorial space and publicity do not have the same value. Publicity is purchased and permits full control by the payer over content, placement and frequency and it is always positive. From the other side, public relations are only half controllable after ceding the materials to the media channel and this can lead to positive, neutral or even negative messages.

Assimilated with publicity, when calculated, the Advertising Value Equivalency (AVE) indicator also serves to determine the PR Value sub-indicator, by multiplying the AVE value (x3), the communication and public relations specialist being considered more credible and more persuasive than traditional publicity.

If in the civil society, the activity of information and public relations is evaluated in order to demonstrate the success and efficiency of a recently conducted public relations campaign, the contribution of the public relations specialist in attaining the communication objective, in order to learn what can be improved in the future campaign and what mistakes not to repeat, as well as in order to obtain a larger budget for future projects, in public relations in the military field the quality and opportunity of the message transmitted are the elements that count and that are quantified.

In military operations, the quantification of the information and public relations activity must be regarded beyond an analytical spirit and the necessity for a quantitative approach. It is the domain in which public relations differ greatly from the civil society, the success of a military operation depending to a significant extent on the results of the public relations structure.

We must not make the mistake according to which the public relations personnel occupy these positions because they can not occupy command positions or other types of positions. The public relations practitioner must be regarded as any other specialist in the military field (infantry man, chemist, sapper, IT specialist etc).

In full period of recession, in military operations, the quantification of the public relations activity must not be regarded as a way to determine costs, but as leverage for the success of the operation, a way to save human lives, material and patrimony values.

The quantification of the public relations activity in military operations is different according to the type of military operation. From another point of view, given the specificity of the operation, regardless the number of military personnel, if we are in a unit or large unit, the public relations team carries out the same activities. One of the indicators taken into account when evaluating a public relations structure in operations is the media coverage.

Other indicators being considered are the *output*, the *out-take* and the *outcome*, the traffic of information, the number of website visits and the comments generated. If a website was created for a certain structure during an operation, the number of visits should be measured, the way in which the website is mentioned on blogs or, if there is a voting system, the number of votes should be measured.

The output indicator rather represents the result of the information and public relations activity than the reaction of the audience. The number of appearances in written and audio-visual media is monitored and quantified, the weight of a message and the audience attained. More complex analyses look to the relation between positive and negative articles, exposure in the editorial space (front page appearances or broadcasts at hours of maximum audience), as well as the efficiency in reaching target groups.

The *outtake* indicator measures the degree in which the target audience understood, perceived and retained the message. Significant difference can appear here depending on the type of operation, the states involved and the forces and means participating in the operation.

The level of the outcome is reached when the information and public relations personnel / structure succeeds in changing the opinions, attitude and behaviour of the target audience. This thing means a lot in military operations. If we take as an example a post-conflict military operation, through a deliberative discourse, in which the

public relations specialist of the military structure in charge of the operation succeeds to induce among the target audience a certain opinion or decision, this thing can shorten the duration of the military operation and reinstate peace, with all the benefits deriving from this.

The information and public relations activity of a military structure usually have immediate effects, which can often be seen with the naked eye. These effects are the degree of attention and exposure given to the respective military structure, the manner in which the public opinion, the society as a whole, perceives the respective structure and its activities, the operations that it plans and execute. It can also be evaluated through the number of citations of the public relations specialists, the way in which he/she and the command of the military unit behave during media events (press conferences, press briefings etc), attendance at events, appearance, content and aspect of press materials (brochures, magazines).

In my opinion, the most important event that must be held in mind in view of the quantification of public relations activities is represented by the measurement of their results. It can thus be seen whether the target groups received, understood and retained the transmitted message and also whether the communication materials and messages that were distributed led in any way to changes in opinion, attitude and/or behaviour.

For military structures, the objectives and missions to be accomplished during operations are of primary importance. The public relations products must be regarded as means to accomplish the mission. As I have previously shown, the information and public relations structures have their own contribution during operations.

If in the civil environment the measurement of public relation results requires sophisticated data collection and processing instruments and techniques, in the military environment, mainly during military operations, successfully carrying out the missions of the operation also represents the success of the public relations activity. In general, this means the limitation to the maximum of the loss of human lives, especially from among the civil population, a desirable image of the military structure, especially its commanders, through political neutrality and the elimination of propaganda of any kind and, last but not least, the assurance of a continuous flow of public information for the personnel of the structures participating in the operation and for their family members.

All these do not necessarily require quantitative, qualitative or attitude inquiries and analyses. From another perspective, the objectives and results of public relations activities during operations, and in general as well, are, in my opinion, worthless unless they continue the objectives of the military structure, of the organization in which the information and public relations structure / personnel functions. It is thus very important that the objectives and missions of public relations structures be integrated in the general objectives of the public relations structures and the public relations specialists participate both in the planning phase and in the execution phase of military operations.

It is very important that the process of quantification of the public relations activity takes place for the entire duration of the military campaign or operation, and not only at the end. Thus, we can avoid the allocation of resources where results do not match expectations. For example, if we planned a series of public events during the campaign, and on the first events we did not manage to attract the desired number of participants, it is time for a change in strategy.

The characteristics given by the socio-cultural environment of the theatre of operations, as well as the specificity of the military operation, will put their mark both on the public relations techniques and means used, and also one the quantification of the results of this activity. In the system of alliances and partnerships determined by the current geopolitical environment, the structures of the Romanian Armed Forces operate in a multinational environment together with the forces of other NATO and EU member countries and in close cooperation with national, international, governmental and non-governmental organizations.

The growing number of civilians in these organizations determines the necessity to integrate and coordinate civil and military activities in order to attain the unity of purpose and action in an area of operations. Knowing and respecting cultural identity, specific to the areas of operations where the multinational forces operate, represent an essential condition for ensuring the success of any mission.

From another perspective, military operations

are conducted not only in order to defeat the enemy, but also to implement peace. In military operations in which weapons are used to impose peace, in my opinion, the attitude and approach of the information and public relations structures must be a pro-active one and a persuasive one toward the target audience, thus facilitating the successful accomplishment of the designated mission.

In order to obtain relevance and value for organizations, the information and public relations personnel must be capable of demonstrating the impact of public relations and of proving their value in organizations.

In conclusion, the quantification of the information and public relations activity in military operations is not and must not be regarded as a process of evaluation on the basis of standard parameters. It constitutes a process through which we obtain data, information whose valorization, in the military field, leads to the protection of the civil population in a conflict area, the success of a military operation, the protection of the reputation of a force structure and its leader.

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REDEFINING COMMUNICATION AN INFORMATION SYSTEM IN SUPPORT OF VERY HIGH READINESS JOINT TASK FORCE (VJTF)

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Abstract: *The military action developed into a complex, dynamic and hybrid environment is basically decided upon by an essential element called "informational superiority". In the context that, the requirements for providing data and information are in an upward dynamic, the existence of a unified communications architecture at the level of the allied military forces and the implementations of deployable and flexible systems, able to process a sufficient amount of information in order to be provided to decision-makers, become determinant.*

Existing interdependencies in the sphere of processing and dissemination of information in cyber environment and the necessity for interconnection of specialized systems, commonly used in contemporary military actions (communication and information system – CIS, intelligence, surveillance, target acquisition and reconnaissance system (ISTAR), automatic weapons systems - AWS, automatic force protection systems - AFPS) highlights the need of unifying network infrastructure and services for all NATO members states. The necessity to ensure interoperability and rapid communication support for new NATO Very High Readiness Joint Task Force (VJTF) becomes vital in hybrid military actions.

Keywords: *hybrid war; reaction forces; deployable communications module; networks; interoperability; cyber operations.*

The hybrid military operation in Crimea had, besides all the negative aspects, the great merit of rethinking and rehabilitation of NATO crisis response strategies, regarding the imminent threats in the Balkans. If the NATO military actions from the last 10 years have resulted in areas such as Afghanistan or Iraq, and the war against terrorism seemed to be the new strategic concern, the emergence conflict in eastern Ukraine, read in conjunction with Russia's threats in the Black Sea led to the definition and operationalization of a new concept of forces, generically called **VERY HIGH READINESS JOINT TASK FORCE (VJTF)**.

VJTF concept arose as a result of the Alliance operational necessity to meet the security challenges intensified mainly in its southern and eastern flank, and it was translated into practice by creating a joi5, flexible and ultra rapid force, that can act immediately, as in terms of hours, for an adequate and deterrent answer to any kind of threat. From a strategic standpoint, NATO designed the VJTF force structure as a new *"component of the NRF, consisting of forces at the highest level of readiness. It is a joint force consisting of a land component with appropriate air, maritime and special operations components as needed. It will be able to deploy within a few days to respond to any challenges that may arise on NATO's flanks. The VJTF's rapid response times and its ability to deploy in advance of a crisis are what set it apart from other components in the NRF."*[1]

From a military perspective, the implementation of the new concept is the adequate response to the challenges and the hybrid threats to the security of the NATO member states, generated by Russia or any other potential aggressor. Viewed from an operational perspective, however, the transition to implementation of a new concept, involves the development of a series of changes both in the allied forces structures, acting as VJTF, and in the national action area of joint force, mainly in terms of communication infrastructure and logistic support system.

The implementation of an ultra-rapid military reaction capability and in the same time, the real action of VJTF, imply the existence of two basic elements for operational success, in terms of CIS

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[1] http://www.aco.nato.int/page349011837.aspx, accessed on may 25, 2015.

support: modular and fast deployable CIS capability owned by VJTF and mature CIS infrastructure owned by the host nation, and interoperable with alliance's technical and operational standards.

Primarily, the VJTF action capability, in the way that was conceptually planned, is based on a very high degree of deployment for ground forces with Special Operations Forces support, close air support and navy support, while taking action in different conflict or crisis areas. In this context, the availability at the level of VJTF structures, of new communication capabilities and a flexible, rapidly deployable CIS system and not least, able to respond timely to current cyber threats, becomes more than essential. New paradigm shift makes the new characteristics of CIS system such as mobility, flexibility, availability and security to become prior in detriment of old known peacetime characteristics like redundancy, complexity of services, collaboration and coverage area.

Second, the VJTF action in operational environment depends on the existence, at the national level of NATO member states, of a solid communications infrastructure and especially, a computers network system, fully interoperable with NATO deployable DCM networks, at procedural, human and technical level, up to network services level.

The implementation and implicitly, the deployment of VJTF structures, in accordance with paragraph number five from the statement of defence ministers of NATO members countries, it is based on the existence, in countries like Bulgaria, Estonia, Latvia, Lithuania, Poland and Romania, of multinational command and control structures, generically named "NATO Force Integration Units (NFIUs)", which will be the permanent and visible element of the alliance in these countries and will act to facilitate the rapid deployment and fast integration of VJTF forces in conflict areas.

The emergence of these new concepts inevitably generates the rethinking and replanning of the CIS capabilities both in the new force structures, but especially in the NFIUs host nations.

Although in theory, the present CIS system developed by NATO and based on the deployment in the conflict or crisis areas, of specialized technical forces and communication infrastructure under Deployable Communications Module (DCM), is able to ensure a wide range of services facilitating communications in benefit of leadership and in support of alliance fighting forces, in the new NATO very fast reaction concept a crucial role for providing CIS support will be played by the level of development and by the resilience of host nations communications infrastructure in order to ensure interoperability for NATO Force Integration Units. The determination of implications can be performed after a short theoretical analysis on the organization of communications and information system in the NATO Reaction Force concept.

Generally speaking, the principles applied in planning and organization process of CIS support, in case of NRF structures are established from the generic structure of NRF. (Figure no. 1[2]). Starting from the distribution of the force structure, Cdr. Vatsel Soames from NATO Joint Warfare Centre, in the seminary paper at "Command and Control for Multinational Forces" – sessions (2006), states that NATO CIS Responsibilities at strategic and operational level *"include connectivity between NATO HQ, Strategic Commands, Joint Force Commands and deployed commands of the Deployable Joint Task Force (DJTF) and sometimes Component Command (CC) levels. […] NATO's CIS responsibility is to ensure proper interoperability between the strategic – represented by Allied Command Operations (ACO/SHAPE), the operational – represented by the JTF/DJTF HQ and partly the component levels – represented by the different CC's. The participating nations are responsible for providing interoperability between subordinate units and CC's."*[3]

The operational communication system in the field, in case of activating the NRF structure, is based on interconnection responsibilities of three entities, represented by: NATO's global communications system, NRF communication infrastructure and not least, national communication system of the allied forces participating in the NRF. The major issue in these actions was represented by the capacity of ensuring interoperability across all communications subsystems both at the level of CIS combat SUPORT services, but also at the level of each nation infrastructure. In order to solve these issues NATO nations have developed and implemented a set of standards and common profiles for

[2] Soames Vatsel, *NATO Response Force and Communications and Information Systems in a Multinational Force*, NATO Joint Warfare Centre, 2006.

[3] Soames Vatsel, *NATO Response Force and Communications and Information Systems in a Multinational Force*, NATO Joint Warfare Centre, 2006. p. 3.

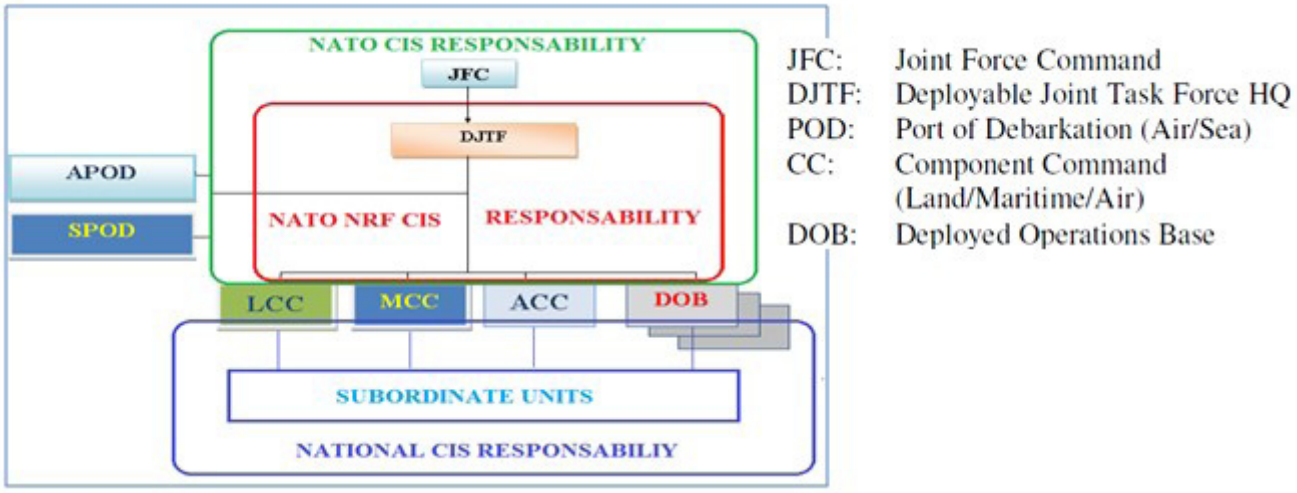

Figure no. 1 Generic structure for NRF – Cdr. Vatsel Soames

information technology domain, known as "NATO Interoperability Standards and Profiles"[4].

From a technical standpoint, the main purpose is to provide communication and IT services by due to the development of duplicate services. The data links and national communication systems of NRF nations, seen as supporting elements for NRF actions, are necessary to be integrated at the levels

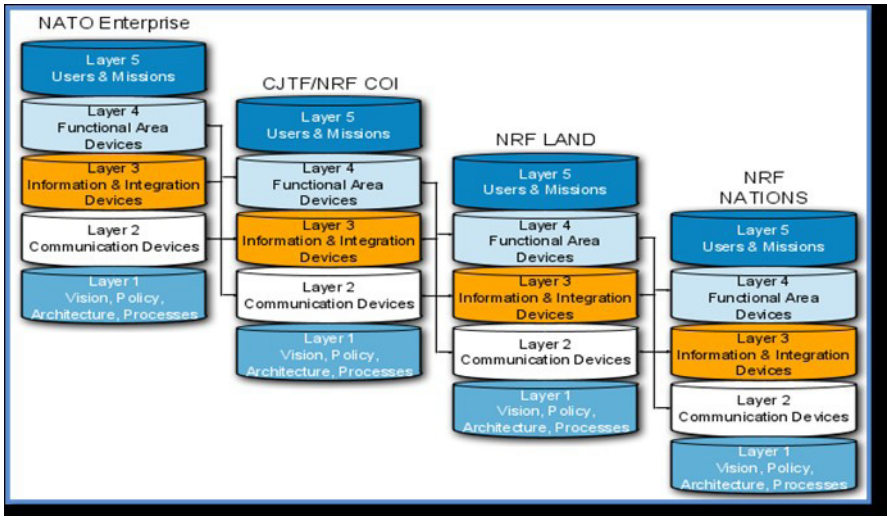

Figure no. 2 NRF NATO Information Environment – NIPS vol. III

propagating the applications and network facilities, in the single integrated information environment, from NATO CORE Enterprise level to the Combined Joint Task Force/ Deployable Joint Task Force, subsequently to the NRF components and finally, to NRF nations. Applying this philosophy determines in addition to major operational benefits, the great advantage of cost-efficiency balance in the sense that a network service, an command and control application or an informational resource owned by a nation, it will be available to all, in an integrated information environment, avoiding unnecessary financial and technical resources consumption of architectures, processes, policies, and not least, should allow the unification of communication and IT services at end-user level.

Diagrammatically, an eloquent conceptual representation was presented in Volume III NATO Interoperability Profiles and Standards (B.6.1. Emerging-NRF NATO Information Environment - figure no. 2), and highlights the need for interoperability and the necessity of connections, relied on 5 architectural levels, acting as a solid base for unified and collaborative communications in a common information sharing environment.

Interoperability issues, in case of using different communication solutions from different generations and standards at the level of each nation and in the common participation to the NRF land forces, was

[4] STANAG 5048 *The Minimum Scale of Connectivity for Communications and Information Systems for NATO Land Forces,* 2014.

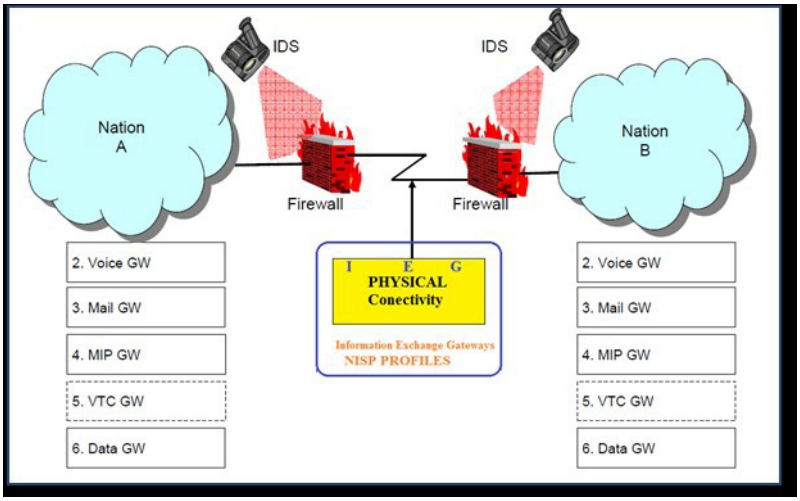

Figure no. 3 IEG solution representation

originally settled by applying IEG[5] (Figure no. 3) concept and technology at physical network connections level. Subsequently, the migration to next generation of C5ISR systems, correlated with the increase of transportation capacity and with uniform application of standards, largely allowed the replacement of IEG solutions by expanding the NATO network infrastructure and services on the territory of allied nations in the detriment of national infrastructures development.

Based on this functional architecture, the introduction in the equation of new NFIUs, simultaneously with remodelling of the NRF concept, would sophisticate the entire diagram of communications services and the whole plan for organization of single informational environment.

If at the level of old concept, CIS services provided to Land Component Command, Air Component Command, Maritime Component Command respectively Deployed Operations Base was represented mainly by voice services (secured and unsecured), video conferencing, email, web services and application management services which could have been provided more or less dynamic, the rapid deployment of VJTF and the development of military actions within hours, requires in terms of services availability, to ensure a continuous flow of data and the development of new functional services such as: Battle space (BMS) and Combat Management Systems (CMS).

Increasing the speed of reaction for the entire CIS system will involve the existence of high operational services availability at tactical level and simultaneously a large logistics footprint with unified logistics services for all forces acting under VJTF. These issues will require in terms of CIS support, shortening the data flows and functional relationships between the strategic and tactical level, thus evading the classical chain "strategic – operative –tactical".

It becomes obvious that, from operational point of view, in case of old NRF concept, the reaction speed and CIS systems implementation was mainly dependent on the troops dislocation ability and data flows were provided up to the last soldier, with acceptable delays caused by the lack of interconnection in all functional services and poor unification of national, NATO and NRF CIS systems. For the new approach, all these issues will have to evolve in order to orient CIS infrastructure (VJTF-national-NFIUs) based on real-time availability of services up to tactical level.

In this sense, although it may be considered premature, perhaps the solution can be represented by the application of Multilateral Interoperability Programme (MIP) solutions integral to the entire NATO C3 architecture and subsequent, the imposition of these solutions as mandatory criteria in the development and evaluation of national communication systems for the host nations of NFIUs or VJTF. Another relevant issue is related to the availability of satellite communications as part of communications support for combat operations. The basis of satellite communications for NRF structures had been and is still going to be represented by a large number of satellite ground stations, principally spread throughout Europe.

This aspect regarding satellite communications in support of NATO operations, even if it was satisfactory for the NRF communication needs

[5] IEG - Information Exchange Gateways, http://www.afcea.org/europe/events/tne/08/documents/03_ InteroperableStandardsProfiles-EWells.pdf, accessed on June 02, 2015.

for a good period of time, in case of new VJTF operational concept, must be optimize. The optimization process it is required at the operational level through allied nation's collaboration based on the "shared costs distribution" principle, in order to develop and migrate to next-generation of satellite systems known as High Throughput Satellite system. In the same time at tactical level, all NATO partners must act unified, in detriment of development and installation of each nation satellite base stations and means, using different technologies.

In case of necessity for a quick response, in terms of services availability based on high security level at VJTF CIS system, satellite communications must be the main transport solution for NATO information exchange environment and for extending services up to tactical forces deployed on short-notice order, in an unsecure environment of operations. From the same standpoint, Gregory Edwards, Director of Infrastructure Services at NATO Communications and Information Agency emphasized that, "*the evolution of NATO is moving away from a defensive type of operation to readiness. Within that readiness, the agency has to conduct a lot more training operations than before. Moving forward, the deployed and a rapid response capability will drive a lot of our needs, particularly in the SATCOM area. Our special operations forces, our lead elements that have to deploy quickly; you have to have a very agile manner to connect them back to the fixed infrastructure, and then conduct planning for, and put more robust bandwidth capabilities into operations.*"[6]

In conclusion, we can say that at alliance level, the course of action that must be followed, requires the adaptation of available communication structures in order to increase the speed of the reaction and the development of tactical communication and information technology systems, including cyber capabilities as part of information support for combat operations.

One of the most striking points of view in terms of communications and Information systems transformation guideline, is the remark of NCISG[7] Commander, Major General Thomas Franz, during Steadfast Cobalt exercise from 2015, when he pointed out that *"with the rapid deployment of the VJTF, all communication systems must be instantly responsive, indeed in some instances operational before any Task Force arrives in location. Commanders at all levels must have a robust and operationally effective system that fully supports Command and Control"*[8].

Reaching this level of ambition will become possible by making changes across three main directions:

- technical transformations at the alliance's communications system, in particular on the deployable components, by increasing the volume of satellite communications links and by developing new unified tactical capabilities in the radio spectrum;

- changes in national structures for NFIUs host nations by sizing the new military structures and by integrating them into the regional allied commands;

- conceptual and doctrinal transformations both at alliance level of thinking as well as nations military strategies of defence, by conceptualizing and standardization of new capabilities such as cyber offensive operations, cyber defence and cyber force structures as separate military entities.

Joint effort and comprehensive approach of these changes at all nations' level will generate the emergence of a new support concept in communications and information field. In this new concept, the CIS structures and cyber actions from network environment will become a force multiplier in terms of VJTF operations in hybrid actions, and will not be considered static supporting elements.

The advantages of these transformations will be reflected, from personal point of view, in increasing the capacity of reaction for deployable communications forces, simultaneously with the change of gravity centre, from the development of complex, extensive and static systems to all allied nations, to the development of system capabilities based on mobile and agile tactical networks in the conflict zone, using the infrastructure of the host nations.

Secondly, they will increase the importance of national CIS infrastructures, in terms of interoperability and interconnection capacity with NATO deployable systems, simultaneously with the development of procedural and human

[6] http://www.satellitetoday.com/publications/eletters/2015/04/06/nato-outlines-satcom-needs-and-goals/, accessed on may 28, 2015.

[7] NCGIS - NATO CIS Group.

[8] http://www.jfcbs.nato.int/jfcbrunssum/news_archive/2015-recent/exercise-steadfast-cobalt-tests-natos-communications-systems-2.aspx, accessed on may 29, 2015.

interoperability, through diversification quantitative of technical exercises and tactical planning and training exercises, based on various scenarios for hybrid military action in areas with high level of digitization.

Finally, perhaps the most important benefit will be represented by the individualization of cyber actionable capabilities as separate elements, such as weapon specialties (infantry, artillery etc.) and their integration up to tactical level of military action, which will generate the rethink of the cyber defense strategies at the level of all NATO members, from a new perspective. The issue of cyber action was initially planned as a small defensive capability for protection of the communication networks and as an INFOSEC policy for the entire CIS field.

However, the new types of threats and the emergence of hybrid military actions, meant that the cyber capabilities to become real actionable elements at technical and military field operations levels and this requires rethinking and redefining the relationship between cybernetic system and CIS system, based on new principles and realities for the new NRF concept of action.

Of course, in this approach, a question arises "whether these changes are necessary or not", but the current reality requires such a thought, and the great merit of the Ukrainian conflict is that it acted as a catalyst for these transformations, managing to accelerate a natural progress generated by technological development, with many years before, in the benefit of the NATO alliance and members countries.

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SECURITY OF THE AIRSPACE OF THE LAND FORCES FROM THE PERSPECTIVE OF THE AIR DEFENCE RESPONSE SYSTEMS

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Abstract: *Contextually approached, the concept of security is one of the essential conditions of existence and expression of the will on self-determination of any entity to which we can refer. From a military point of view, the security of forces and their actions has often been assimilated with the multitude of safeguard measures against the potential danger in a particular action environment on land, air, sea or water, generally expressed as multidimensional protection. The level of unprecedented technology applied to the confrontation environments, has prompted natural reactions to identify the best air and air defence response solutions for the security of the air space. Following the personal scientific research approach, we consider particularly important to follow the ratio of danger distribution of the air threat in the air defence system countermeasure, especially within the land forces, by highlighting the "fight with the seconds" implicitly generated by "the vector of speed of action" of the hostile aircraft in the airspace of responsibility.*

Keywords: *security; air defence response; "plug-and-fight"; collaborative network.*

The multidimensionality of the modern battle space has naturally determined a corresponding involvement of the degree of technology of the forces and of the military engagement means for maintaining or gaining the security status vital to any structure or entity to which we can relate. Due to the catastrophic events occurred in the airspace (September 11, 2011, USA, or 17.07.2014 Ukraine, etc.) the need for air security went beyond the conceptual environment of exclusive application to the military domain, so that more often concerns were raised related to the cross-border illicit air actions identified as new threats to the states and international communities.

Issues concerning air space security have become a priority in the air defense sector because of the terrorist threats made by hijacking civilian aircraft but also by the widespread use of small radio guided aircraft designed and equipped for performing multi-task missions. The effort of specialists in the field of military and civilian assets security consists in defining and understanding the mutations occurring in the means and forms of organization adopted by various military, paramilitary or terrorist structures. The technological gap and the limited access of certain hostile parts involved in direct or terrorist conflict to the latest technical and scientific innovations can be estimated only as a matter of time and not as a permanent advantage of the most updated modern military combat systems. The arming race generated by the Cold War between the consecrated political and military opponents, was the starting point of what we know today as a split of the major conflict in "hot sports of local military conflict" that because of management mistakes might extend much beyond the initially determined expectations.

It is further expected to witness a radical transformation of the traditional battlefield as we know it by widely employing the computerized information platforms, the microelectronics applied in all areas of social life and their expansion to all known existential environments. In this regard, we consider that the overspecialization of the air threat countermeasure systems may be an important step for generating sequential action opportunity within the integrated air defence response process which triggers the disuse of most of the technical systems designed for individual actions characteristic to the years 1970s – 1980s. In order to exemplify, the stealth technology has determined a strong decrease of the major role of discovering aerial targets by the radiolocation structures with the traditionally known radar types. The same happened with some air defence systems where the overloads that the aircraft can carry when performing avoiding

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maneuvers have increased significantly compared to the maximum gravitational limits endured by the anti-aircraft missile body. Also, the electronic warfare measures (jamming) available to the aircraft make useless the search, track, combat and destroy subsystems specific to larger or smaller scale air defence systems.

In order to improve the technological gap between the opportunities for air action and counter air action work is presently on the way to identify new types of air defence systems, tactics and methods of use in battle aimed at discouraging and providing a credible air defense for a variety of military or civilian objectives. The tendencies to make the collaborative working effective have been directed mainly towards the management, command and control of various similar or totally different air defence artillery and missile systems. One of the results of such a joint air defence effort of the 2000s can be exemplified by the concept of "Medium Extended Air Defense System", or MEADS of the partnership between USA, Germany and Italy, extended to other countries such as Poland[1].

Although the MEADS program was initially designed as an alternative to the obsolete air defence missile systems PATRIOT, HAWK and MIM14 NIKE-HERCULES, it has managed to become, due to the involvement of NATO the first 360^0 air defence multinational integrated system of the land forces and of the stationary objectives in the territory against all air threats such as tactical, ballistic, or cruise missiles, helicopters, unmanned aerial vehicles, multi-task aircraft, large caliber missiles and projectiles. The main features of the collaborative air defense architecture MEADS are mainly given by the high degree of interoperability, the extended 360^0 air defense space, the increased mobility and responsiveness on land and in the air. These features are fulfilled by an integrated air defence system, fully interoperable with NATO structures, designed to respond to the new issues of air threats proliferation.

As far as we are concerned, we would like to present some of our observations on the concept of integrated air defense against some of the possibilities of engaging a fight in the airspace of hostile air platforms. The first aspect is related to the mode of high-risk action against a certain size ground target where the aircraft, with or without human personnel on board, may act as in Figure no. 1.

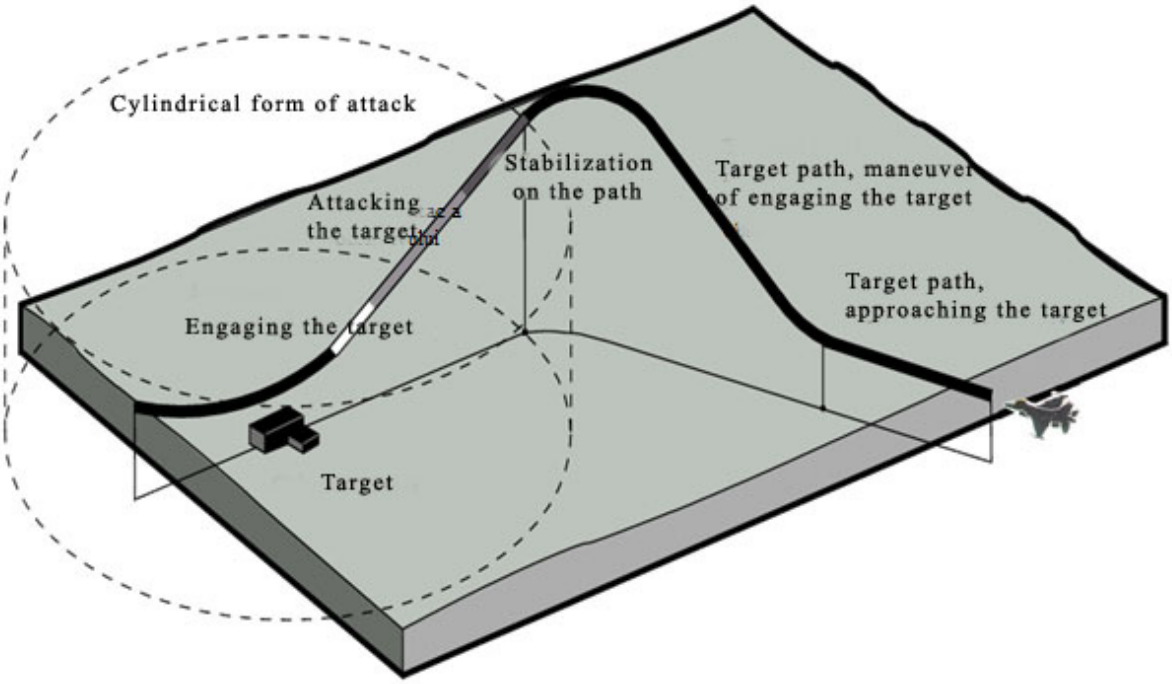

Figure no. 1 Interpretative variant of the mode of air action for deceiving the air defence system while hitting a ground target

[1]http://www.pddnet.com/news/2015/01/meads-ready-transition-european-follow-programs

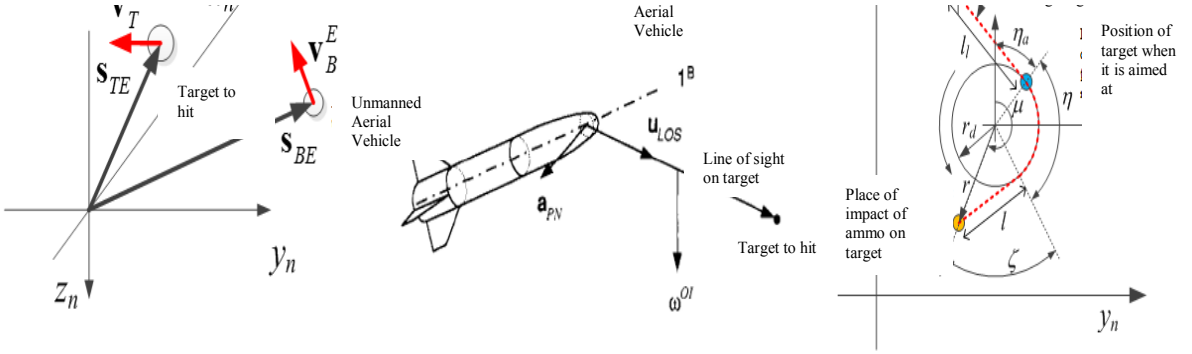

Figure no. 2 Action of the motion vectors of the aircraft after tracking the target

Interpreting the aircraft's mode of action, as in Figure 01, can be done from various points of view: the shape of the path, "the speed of approaching" the target, different capabilities (deceiving the air defence, air and ground coordination, independent decision and engagement of multiple targets, etc.), possibilities of surviving after the interaction with the defending forces, etc. Irrespective of the mode of air action, the aircraft (manned or unmanned) kinetically behaves like any other vehicle, its behavior being describable by the action of the motion vectors in relation to the target intended to be hit. For example, Figure no. 2 shows some descriptive elements highlighting the reference systems: one related to the aircraft, another one related to the targeted objective and a third system given by the air defense system.

Our observation is related to a new perspective on fighting the air enemy, based on the describable mathematics for a trajectory seen from many points of view, from several reference systems. The two trends of expressing the accomplishment of the mission are given by the aircraft reference system in relation to the intended target reference system and a second element is given by the air defence component reference system and the reference system of the attacking air target. The two directions of action can be described as a sequence of "events" that could occur in time (expressed in seconds and tens of seconds). The identified events may refer both to the aircraft - target interaction and to the air defence system - aircraft interaction. What links the two events (on the same unit of time) is fulfilling the mission; the aircraft must destroy the intended target, and the air defence must destroy the hostile aircraft. Mathematically expressed, this can translate by positioning in space and time certain motion vectors describing the coherent positioning of the reference systems that simultaneously describe air and air defence actions. For example, for the air defence sequence of searching and tracking the aircraft with the highest degree of hostility in the situation of "linking" the aircraft's interest of annihilating the air defence system, tactically speaking, several interposing reference systems can arise by employing UAVs with the "shield effect" as shown in Figure 03. The shield effect can be one of the methods of deceiving the air defence response system, be it a newer generation one, in the sense of misleading on the real air danger, on

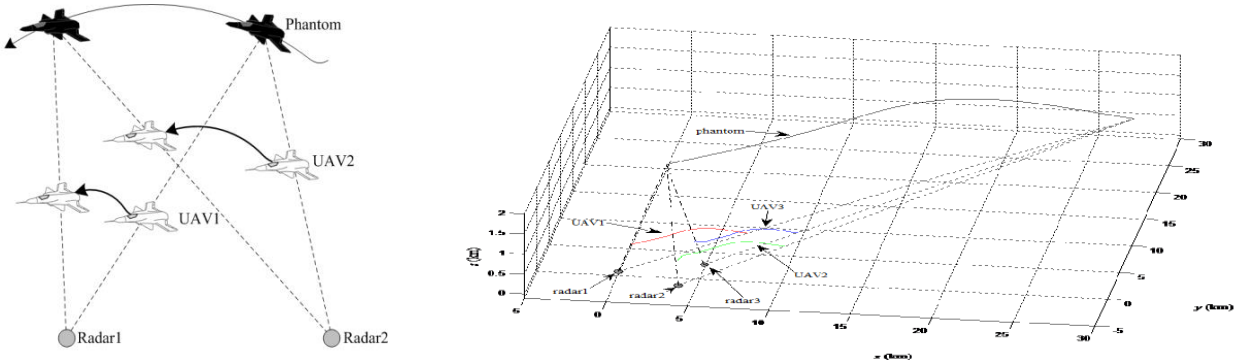

Figure no. 3 Involving UAVs in the tactics of deceiving a network of radar stations[1]

[1]http://ascl.kaist.ac.kr/uav_gnc_02 - accessed on 29.04.2015

engaging the most dangerous target. In order to understand the phenomena of air defence and to identify certain solutions to solve *the problem of the impact of the air defence projectile/ missile on the target* (its destruction), we opted for applying *the theory of the reference systems*. In this concept of the referenfe systems, new research directions arise by applying the concept of interaction in *double context, of space and time*. The issues related to space describe the position of the involved elements (aircraft, objective, air defence system) by means of position coordinates x, y and z (latitude, longitude and height). The issues related to time are given by the three moments: present, recent past and immediate future. Due to the high speeds of airspace action, we opted for explaining by applying the notion of "immediate" (seconds and tens of seconds).

Our research effort on finding a solution to a particular air defence case focused on defining and applying the concept of "the reference systems" which has the power to explain what happens in the air, on account of the interaction between the hostile aircraft and the air defence system in question. The airspace of responsibility of the land forces describes very well the typology of the path of an air target, which, seen from the perspective of the air defence action: reconnaissance, detection, identification, tracking, combat and destruction, evaluation of air defence firing and resuming operations, shows the sequential action of the air defence system, following a workflow model. If during the fight with the air enemy there are more "air defence participants" but each of them makes its own air defence workflow, then we can talk about cooperative action, but if the air defence operating monoposts contribute to achieving the same air defence workflow, each having an "intervention" on a certain work phase, then we talk about an air defence collaborative working.

The concept of air defence collaborative working is a new one, where each element is involved by unique participation on efficiency criteria and timely framing (in space and time) in order to produce the maximum intended "plug-and-fight" effect. The "plug-and-fight" concept, similar to that of "plug-and-play", is the essential part of MEADS, generated by the flexibility of the air defence open structure, which we have identified as one of the important provisions of the air defense capacity of the 21st century. The open air defence collaborative working MEADS can generate greater firepower on the same mission but with a much lesser waste of forces and equipment than compared to the air defence firing systems of operating monopost type. The sequential work is the one that makes possible to delegate - take over the command and control of the firing subsystem, to and from another air defence procedurally involved control unit, in order to manage the air defence fire of another operating monopost when skipping its own command post.

The MEADS concept, by "plug-and-fight" applicability, provides new knowledge opportunities in the direction of integrating the air defence response systems with obsolete individual capabilities but which, included in a network of collaborative working can have a definitely performance and essential for fighting the air enemy, and it implicitly provides the security of the airspace of responsibility. The character of the air defence artillery firing clearly lies in anticipating actions: what we should do now, in the present stage (based on what happened – the recent past), so that we can accomplish the objectives in the next stage as well (the immediate future), and so on, to get the maximum results in terms of efficiency and fulfillment of mission.

Following the personal endeavour of conceptually tackling the issue of the combat with the air enemy, we intended to highlight the key aspects on the degree of individual and collective involvement of the air defence operational monoposts under the conditions of a tactical development technologically supported by joint action in the variant of cooperation and collaborative working.

In conclusion, we can make judgments on the behavior of certain structures that establish relationships with environmental elements and interact with each other in the competitive context involving actions in several directions, and the results can be surprising in terms of finding a new concept of air defence collaborative working on "plug-and-fight" criteria, on efficiency and best performance. It goes without saying that for any organizational structure that interacts with other similar or different structures, it is primary important to harmonize the internal architecture so it would be able to undertake the information of the external flow and also to make intelligible its

messages transmitted to the outside, to the other partners of the collaborative working (workflow) so that finally an actual security of the airspace of responsibility can be established.

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THE INFLUENCES VARIOUS TYPES OF LEARNING AND TECHNOLOGY BEAR UPON MODERN EDUCATION MECHANISMS – SOME CONSIDERATIONS

Dragoş BĂRBIERU, PhD*

Abstract: *Set along classical training forms and methods, eLearning can trigger new procedures to solve labour related problems, irrespective of the activity-driven work load. This modern form allows accomplishing tasks remotely, minimizing the needs for actual move and sudden breaks from current activities. When best tailored for teaching activities, eLearning raises a series of pedagogically, technologically and eventually pragmatically driven challenges. Yet, when facing new challenges, new requirements and educational necessity, we need more than technology and pedagogy can offer, we need new energies and new aspirations.*

Keywords: *Pedagogical approach; eLearning; education.*

Without requesting exclusivity, eLearning provides new educational and training opportunities since it is popular today in all universities, being a side component of the traditional learning, based on hardware and software technologies brought up by the evolution in society. This form of information dissemination can be extremely effective if the military personnel who needs training is scattered on a large geographical area, within various operations theatre. ELearning as a concept and as a means to disseminate knowledge is part of the Advanced Distributed Learning concept[1].

"Carol I" National Defence University currently unfolds military courses via the Advanced Distributed Learning Department and provides an accomplishment certificate, supporting teaching activities for the master and doctorate programs. The success of this training is revealed by the high number of trainees; thus, for Introduction to NATO there have already been 23 series, for the Conflict Management and Negotiations course there have been 15 series, for Law and Armed Conflict there have been 12 series, for Common Security and Defence Policy there have been 10 series, altogether giving way to an average of 8000 student accounts on the department's learning management system (LMS).

[1] The e-learning program (TADLP- Army Distributed Learning Program) was first opened in 1998 and it is part of the US military training and development system.

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Beside the achievement of resource savings, the student has his own learning pace, no time restrictions, while he is off duty, without putting aside his work assignments. He can do this in the environment he chooses, with his family and friends alongside. To reduce confusion and alienation while learning, various forms of communication offered by the eLearning platform can be used, to turn learning into a more social activity. Technology does not offer solutions to identify the test taker in an evaluation process and neither does it cover the reliability of the fact that the test taker simultaneously refers to references while being evaluated. However, we believe that multiple choice tests administered in the secondary and tertiary education is a good thing; the drawback is that these tests do not scaffold logical thinking, synthesis and analysis, and even more, they limit imagination. An essay, a synthesis, a composition, the logical and coherent solution found to a math problem will always be thresholds for the learner whose knowledge is built on multiple choice types of tests. Needless to say that more hilarious are the situations when a faulty rationale can lead to a right answer; such situations can be possible. Leaving aside the wrong answers and choosing the most possibly correct answer in a multiple choice item is another aspect that is detrimental to learning. It goes without saying that the multiple choice test is output oriented and it does not matter how one gets to it. Introducing multiple choice tests in the development stage as a form of evaluation and checking for the secondary school

represents a limitation as the latter ones are not after the judgemental skills, after the synthesis and information analysis and transfer. This is the context where one can meet students that cannot be rational and deductive, cannot develop ideas or analyze a given text. It is even worse sometimes when the student can know the answers for some series of sets of tests within an exam, being motivated towards memorizing instead of focusing on correlations between the acquired pieces of information.

In educating and shaping adults into acquiring certain terminologies, concepts, information where one needs to know and memorize without performing complex analysis, the multiple choice test is a facile solution. To this end, in order to encourage the students attending online courses within Advanced Distributed Learning Department, the multiple choice final test can be performed twice. The final test does not contain a fixed set of questions, as they are generated randomly from a huge pool with inordinate other similar questions. This way, each student has a personally tailored quiz at the end of the course, with various sets of questions displayed each time the test taker tries to finalize the course. This method is used at the European Security and Defence College[2], where the students have endless trials to be able to finalize the course by the trial and error system. The final goal is not to differentiate, rank or eliminate but to get each learner achieve the desired set of knowledge in a given timeframe. The meaning of the word *test*[3] most frequently met is about connotations which identify themselves with the results of the participants to give way to a ranking both in people and results and get classifications for the people admitted to attend a certain course, while the test itself is a mere check of the starting level knowledge, as the tested people were not competing against any challenging position.

The same vision is followed in the German army where in training and education programs the instructor plays a crucial role and this attribute is not simply to provide knowledge and skills training, but extends to new responsibility's such as: ensuring quality educational program and training when activities in online program are connected to real-world applications, ensure that the remote program schedule is respected and providing support for students in case of questions and technical problems.

Developing new technology, lowering the price for the current ones, diversifying the teaching methods lead to research into the educational performance but these are not enough criteria to guarantee a learner`s preparation. The learner-related education is an intimate[4] process that is connected to a series of attitude generating factors which we will try to highlight based on the impact they have. These are not independent one to another, so classifying them based on importance is a matter of personal choice. The main actor is the environment where the individual spends most of his time – that is his family. The family is the one that can design requirements and criteria, the one that can promote values and establish goals. The individual is the actor, represented by the personal effort and individual work, the interest manifested in gathering and managing new pieces of information. The existence of educational objectives and of an individual career plan, doubled by curiosity, is the stage for such an actor. The innate intellectual gift can enhance the personal effort and it is the element that develops the range of individual choices. In the current socio-economical context, where, touching upon competences one lays prints on the pragmatic side to answer an ever changing society, the learning required level to successfully integrate an individual in a society does not require labour to surpass the capabilities of a common individual. The only requirement is that the individual should get the required information within the needed moments by triggering the factors that enhance the desire to learn and know and make everything achievable. To this end, the debates between the approaches on the developments offered by the psychologist Jean Piaget[5] and the mental universal representations that support their innate character raise a series of questions in Noam

[2] The European Security and Defence College LMS is hosted by Romania at the Carol I National Defence University, accessible at https://esdc.adlunap.ro

[3] Test (acc to DEX) is a stage when perceptive skills are examined, be them kinetic or mental, intellectual development, aptitudes, etc. Also, a test is a written or oral form of knowledge examination. An exam is a way to test and appreciate the knowledge a student or a candidate gets in order to finish a course or get a position.

[4] The Romanian pedagogy researcher Constantin Narly considers that education is "both a social and an individual act, simultaneously".

[5] The youth are not miniature adults, ignoring the own ways of representing lives.

Chomsky`s[6] view about the teacher`s role : "the environment does not introduce more complexity inside someone`s brain than in other organs"[7]. There have been different trends of thought in the history of education, theories about the ontogenetic process and the influences of various endogen and exogenous factors. The heredity[8] theory focuses on the important role of the genetic factors and it is sceptical about the teacher`s environment and role. There have resulted various theories out of the previously mentioned one, some of them being criticized and others either/or denied, as such: the inneist theory, the organicist, the sceptical, the racist theory, similar to Cesare Lombroso's[9] theory of the innate criminal. In chapter 8 of *The Theory of language. Theory of learning*, the biologist Jean-Pierre Cahngeaux[10] states that:" the extreme structural complexity of the central nervous system is in contrast to the weak genetic information quantity available". Radu Gologan, the leader of the Mathematic Olympics team and the President of the Mathematics Sciences makes the following comments in an article:[11]"...there has not been any child from the rural area to come to the national mathematics contest. Should we look at the range between grades 5 to 12 where there are 700 children from across the country, we must say there was no child from the rural area" This way the focus is laid on the environment where the upbringing takes place, and , more than that, the role the school has. Yet, we cannot draw conclusions as in this situation the rationale should work based on exceptions from the general rule. To support this, the book *Bell Curve* written by Richard Herrnstein and Charles Murray is a trial to demonstrate that intelligence is the most dominant factor within an individual's line of life and it is based on a series of statistics about the socio-economic status and the trends towards some individuals' criminal behaviour. These have generated a large series of debates and have been acutely criticized for supporting the racist ideology. This subject will always be controversial, in the author's opinion, and we should state that environment is a catalyst factor in an individual's shaping.

As a reaction to the hereditarian theory, the ambientalist theory lays accent on the socio-cultural environment and on the importance of the exogenous factors. JB Watson stated that he can transform any child in any type of adult, provided one has the needed tools: time, patience and the sum of rewards and punishments given. Behaviourist theories have not yet vanished from education, they are met even today within the "red dots" when national standardized tests are administered. The curiosity children manifested or their endless energy are often prohibited by such methods. Along the human species evolution, curiosity was the mechanism by which human tried to meet the world and which helped him synthesize and approach things in an abstract way, to deal with concepts, to approximate in order to anticipate dangers and new situations. When they are at the beginning of the road, children use this resource fully, in order to build themselves a personal perspective over reality. We believe that this functionality diminishes and eventually fades away when we speak about an adult that has an already built perspective over the world, as the adult can approach things in an abstract way, he can anticipate, and this issue can question the lifelong learning concept. We should not yet mistake a repetitive activity that renders pleasure, satisfactions and rewards for the curiosity that surpasses the area of a single field or activity. We believe that the promoters of the behaviourist theory have very well understood that pain and sorrow join people together, as people are equal when facing it, while happiness seen as accomplishment is a state that is different from one person to another.

The theory of double determination brings conciliation between the different perspectives of the two theories already mentioned and also introduces education as a main factor. Lev Vygotsky`s social constructivism states that the learning process can be achieved through models, in a social context: "We know ourselves as we are aware of the others and we are aware of the others as our own awareness about our self comes from the awareness the others have about us"[12] This theory had a special influence and the concept web 2.0 supports this, that is why web 2.0 is not a really new technology, it is more

[6] Noam Chomsky considers that language is a cognitive specialized system with psychological and neurological representations.

[7] Noam Chomsky, Jean Piaget, *Theories of language, theories of learning*, Political Publishing House, 1988, p. 335.

[8] http://en.wikipedia.org/wiki/Jean-Pierre_Changeaux

[9] http://en.wikipedia.org/wiki/Cesare_Lombroso

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[11] http://www.hotnews.ro/stiri-esential-15644874-problemele-esentiale-din-educatie-vazute-ong-uri-gradinita-obligatorie-calitatea-profesorilor-plu-ultimii-2-ani-olimpiada-nationala-matematica-nu-ajuns-niciun-copil-scoala-sateasca.htm

[12] Emilia Albu, 2007, *The Psihology of Ages*, Univ. Petru Maior, Tg. Mureş.

of a mentality.

The characteristics of the web 2,0 are embedded in the social and interactive aspect. The models can trace the way, while by means of interaction and limitation we can reach our goals. The value of this theory can be seen in informal education. The multitude of the media channels, the blogs and forums, virtual conferences, social media, Massive Open Online Courses[13] confirm the individuals desire to learn, to communicate, to be connected and participate. In formal education, most of the eLearning platforms have software eLearning tools to communicate and bring interaction among students. A necessity for students is the presence of the tutor, of various means to communicate, of an access to various educational resources using the mobile devices. We thus state that social interaction and the social aspect of learning can lead to conformism and uniformization. Moreover, these call for authority, over-evaluating teacher` s role, which can limit the critical spirit and curiosity, the student having some patterns and predefined recipes. It is hard to believe that the tutor/teacher can satisfy the educational needs for a large group of students on his own, and that is why the student centred learning process, targeted on the student`s needs tries to involve the other students in the class in a real exchange of ideas and knowledge. The birth of this theory gets intersected with the Russian revolution, Vygotsky being influenced by Marxism, so we can anticipate the birth of the "new man", the educated one, the one influenced by society, while there is no accent on the unique and particular nature of the human. Today, the media of communication and information can exploit human`s social nature via different means, which probably are responsible for Vygotsky"s success. Competency-based education is a challenge for teachers as well, as they have to adapt to the labour market requirements, therefore their competency area must permanently be updated. Should I anticipate, we believe that the development of the artificial intelligence along with progress in the fields like nanotechnology and neuroscience will change both the teacher and the school? The first one could be replaced by software intelligent program that addresses each individual separately based on own needs and they will not depend on a lot of other factors like emotions, fatigue, time etc. The history of education, we believe has kept school connected to the real keepers and knowledge generators. At the beginning, education addressed the elite, school being active alongside temples, churches and monasteries. Both the Enlightenment and the industrial revolution have been factors that took education to the public level and it has become a necessity for the modernization of society. The public mandatory education becomes a state attribute. Even since the first Romanian school in Brasov[14] that activated near St Nicolas church to the first modern law of the Romanian education[15] when Cuza ruled, education passed through various stages and the results were not sudden. To this end, school went from church administration to the various court administrations and it was much later when the public mandatory education was introduced. We need to call this history upfront in order to explain what led to competency based education. Gradually, various specialization programmes were introduced in schools, based on various technologies[16], this making possible for students to enter the labour market without further much ado. Excluding the states national educational projects and also some disciplines that fit in the services field as occupational areas, a synchronization between school and the educational environment was needed. It is thus possible that the state would not be the main actor in the future and might lose the role it had in the 20th century, that is to educate large scale people. The economical system shows that among the knowledge generator vectors are the companies and the large corporations. The European research projects represent, we believe, an essay to save the traditional school by bringing and orienting the academic community towards new technologies, interests, directions and societal challenges. The economical model is the one generating these changes and for sure significant alterations will occur in the future. It is believed that by introducing competences, social cohesion level will increase, enhancing the graduates` possibility to find and fill in a work position, knowing that youth unemployment for people between the age of 18 and 24[17] is high in Europe currently. We believe that only by introducing competences filling in new positions will not be enhanced, as the main factor is a lack of

[13]http://en.wikipedia.org/wiki/Massive_open_online_course.

[14] The first Romanian school is from Brasov, at St Nicholas church in Cheile Brasovului neighbourhood The first classes were in 1583.

[15] School law in 1864.

[16] Cisco program can be an example.

[17] http:// ec.europa.eu/eurostat/statistics-explained/index.php/file:employment _rates_by_age_group, 2013

jobs and not the quality of education, knowing that many companies provide various internships and training to their newly hired.

A huge advantage for the military personnel is the introduction in the Romanian Army of qualification courses that are certified by ANC (National Qualifications Authority). These courses are carried out with the support and online technology through online e-learning platform of the National Defence University Carol I. These courses like health and safety at work, environmental manager, PSI technical personnel offer new qualifications and skills useful for army personnel and are recognized both in military and civilian life.

Contemporary learning theories establish four learning types[18]. **Cumulative learning** is characterized by acknowledging new patterns of thoughts, where the information is new and has no connection to what we have previously learned. This type of learning best fits to the multiple-choice tests, where the main focus falls on memorizing. Using the eLearning LMS and the software tools offered by this, the cumulative learning would help considerably. We can thus imagine several situations, such as: new terminology learning (NATO terminology or a new program running rules, a game – Virtual Battlespace 3, etc).

Assimilation learning represents the type of learning where the individual connects between what he is currently learning and previously inherited patterns. Although the topics within the subject matter follow a logical line from simple to complex and enhance assimilation learning, we still believe that the Romanian school does not lay accent on the pluridisciplinarity and multisciplinarity, interdisciplinarity and transdisciplinarity. Currently, school does not promote interdisciplinary and transdisciplinary aspects, such as the link between the numerical system and geometry, the correlation between Kirchhoff`s laws and geophysics, similarities and differences between the birds and human species` migration. The existence of higher mathematics within some disciplines make the understanding of some phenomena impossible, while the lack or the insufficient attention paid to logics changes the student`s perception in a negative way. The skill of correct thinking is one of the most essential elements that will positively mark individuals` lives as this is a necessary but not sufficient condition to make the best decisions. We believe that any exam should include a test to check the logical process of thinking. This model is used in Romania for the judicial system entrance examination[19] but similar tests exist (for example the GMAT test) in other countries to allow access to a master program. This test focuses on[20]: critical reasoning, analytical writing assessment, quantitative, sentence correction, reading comprehension, integrated reasoning. Also, we believe that extending the curricula on a longer period of time would be counter-productive. A connection between the cumulative and assimilation one is offered by Tony Buzan[21] and the methods he proposes for rapid learning.

Learning by accommodation or transcendent learning means breaking some patterns of thought and inheriting some new ones to correspond to new learning contexts. The individual must accept something different and this fact is more complicated than adding new information to an already existent pattern. In a society where information is accessible by various sources, where the rhythm of scientific discoveries is alert, while an inflexible thinking is an obstacle into adapting an individual to the environment. It is by experience that we have reached a new perspective which is the probability based thinking, where one can associate probability factors to events and information. Placing new knowledge into a cognitive flux and into a specific context can offer a larger perspective over the world. This pattern of thought should build the pattern that is closest to the contingent reality. The cognitive flux is based on the logical argumentation and its placement into a context refers to experience and imagination. A software tool that is very useful in this case is Mind Mapping, useful for creating representations of mental maps. We have to say that learning is not a singular act, is implies feeling as well, that is why an inflexible mind can generate negative and frustrating attitudes. Generally, individuals notice what they like or what they understand, that is why breaking the patterns of thought, represented by this type of learning is energy- consuming, yet there is the bonus of "….this type of learning that is

[18] Contemporary learning theories, Knud Illeris, Ed. Trei, „An exhaustive understanding of human learning", p. 31.

[19] *Guide to solving the logical thinking evaluation, issued under the project*" technical support to provide critical thinking tests" financed by the World Bank program for the judicial reform http:// www.uvt.ro/files.

[20] http:// www.edventure.ro/engleza/gmat.

[21] http:// en.wikipedia.org/wiki/Tony_Buzan.

characterized by the possibility of being reactivated and applied in many different relevant contexts"[22]

The main threshold for this type of learning is conformism, because once a pattern of thought is created, this will generate comfort for all our actions and we will try to eliminate any new idea that changes the current state. Were we to consider the book *Thinking, fast and slow* written by the psychologist Daniel Kahneman[23] it should be stated that here we meet the pleasure of cognitive ease:" The link between the positive emotion and cognitive ease of System 1[24] has a long evolutive history"

Another learning type that is deep and vast is the **transformational learning.** This can bring changes of personality and results in a crisis situation. Professor Jack Mezirow launched this concept in 1978 in an article published in the US journal Adult Education Quarterly. The author considers that "the two major elements of transformational learning are, firstly the critical reflection or self-reflection over any assumption - critical evaluation of the sources, nature and consequences of our mental habitudes-secondly, our free and full participation in a dialectical discourse to validate the best reflexive argumentation" The need to build a new inner vision of the world, in a world where the valid information is not always easily accessible, the critical spirit and sceptical nature turn the individuals that hint for this kind of education into rejected or unreliable individuals. To us, the final target of this endeavour should be a higher level of understanding, but it could be possible that negative/ positive feelings accompany us on the way. Were we to take a short imagination test, where a third party told us that all we know, all we learned or were told by others is false, we could assume it to be a traumatizing experience. Transformational learning can be the ultimate level in the process of becoming a mature adult. Should we parallel the transformational learning stages to intelligence development stages belonging to Jean Piaget and Chomsky's inneist perspective we could state that it is only at certain stages of life that we can access the transformational learning and that it is a certain genetic determinism for that. Simultaneously, not all individuals feel the need to know, and those who do not have such curiosity have other types of needs that could change their way of living, their habits, their values. Critical thinking is not easily accepted by the individuals, groups, ideologies, and that is why the critical thinking father's end, Socrate's, a spring of endless thoughts for humanity, to the benefit of the state came the way it did. The method he used, maieutics, targeted reaching truth via dialogue and debates, where the principle of ignorance and doubt in his discourse has a deeply critical character.

Stephen Brookifield[25] is a contestant of the transformational learning and his arguments are based on ideological criteria. He sees critical reflection as a criticism for an ideology, stating: "...it focuses on people's adjustment to become aware of the way capitalism moulds systems of beliefs and assumptions (ideologies) that justify and maintain social and economical inequities"[26]. We believe that critical thinking should be no one 's enemy, as this is meant not to bring one injustice but, on the contrary, to connect one to a brighter light, to a contingent reality, in order to rebuild and progress. The main target for this type of learning is not related to ideologies. From a constructivist perspective one believes that personal evolution means going through certain stages that all lead to maturity. Maria Carmen Matei (Stefanescu)[27] arguably considers that "a transdisciplinary perspective like the one advanced by critical thinking, can ensure a better awareness of the dysfunctional phenomena (disinformation, diversion, discrimination, manipulation, etc) and yet a better defensive strategy against these, keeping control of the detrimental effect of the quality of life as much as possible."

Society and family with the help of the values they forward, school and its contribution via the quality of educational performance, are actors that work together and should not be taken separately in the act of human shaping. Research in the field considers heredity to be an important actor as well, yet, without degrading it, we believe that Roma-

[22] *A comprehensive understanding of human learning*, Knud Illeris, p. 32.

[23] http://ro.wikipedia.org/wiki/Daniel_Kahneman.

[24] Psychologist Daniel Kahneman, Nobel Laureate, considers that human thought is controlled by two systems, system1 that he calls *thinking fast*, which is intuitive, unconscious and does not need voluntary effort or control, while system 2, called *thinking slow* is conscious, it uses deductive rationals and it needs a lot of effort.

[25] http://www.stephenbrookfield.com/Dr_Stephen_D._Brookfield?Home.html

[26] *A general approach over transformational learning,* Jack Mezirow, p. 177.

[27] PhD thesis "Rationalizing in the context of critical thinking", Bucharest University, faculty of Philosophy, retrieved from http://www.unibuc.ro/studies/Doctorate2014iulie/MATEI

nian educational system should address the many common ones and not the few chosen. Currently, the undergraduate educational system abounds in series of negative aspects by family relationship degradation due to the fact that parents no longer spend time with their children, being either very busy or abroad, to work. Also, teachers are no longer involved in the teaching process and they grade students based on unreal criteria.

The need for critical thinking, we believe, came as a current of thought against the abundance of information overlapped with the individual's confusing attitude towards society. Should we look at the abstract of the PhD thesis "…social decision from a critical thinking perspective"[28] the idea of introducing critical thinking in schools and university's curricula is highlighted, arguing that:" students can be taught minimal critical thinking terms in any field. There is basically no reason why students should not use the basics of critical thinking they learned in a subject and then to extend this information (with limitations, of course) to other subjects and fields they study"

The community can substantially contribute to individuals' informal education and a new actor emerges on the stage, where the technological support can make possible a large array of courses that are open, libraries, forums, blogs, Wikipedia, communication/information platforms and open educational resources[29]. This is a concept firstly defined in 2002, within UNESCO meeting in Paris, aiming at integrating software technologies and educational resources along with promoting scientific research, to offer free access to all this for the teachers, students but also to those that are not necessarily and formally enrolled into a form of the educational process.

Education must address everybody, it must keep standards for evaluation and examination by putting an end to the multiple-choice test run within entrance examination, selection process, ordinary exams, and national exams; thus, prosperity and security will be accomplished. Developing capabilities to adapt and think can replace lack of experience for the young graduates. Introducing informal logic and critical thinking in schools would be a huge advantage. Supporting disadvantaged children, integrating the Romany people, stimulating the educational staff into performance, programs and frequent contacts between school and family can be clear courses of action.

Using open resources requires well protected security information's systems. In this regard, all educational materials that can be accessed on the Internet regardless of the chosen security solution must be unclassified.

Through using the e-learning system, the military personnel will gain access to a modern and high quality educational system, designed for the specific needs of the area that is available anytime and anywhere with minimal costs. Moreover, an integrating educational perspective will ensure consistency and will open the way to achieve our aim, namely to provide learning activities and quality instruction to as many students as possible.

It is difficult to anticipate the future for all educational programs and therefore personal involvement is needed and the way for success.

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[28] *Social decision from a critical thinking perspective",* Bucharest University, Philosophy faculty, author Ionescu Florian Mircea.

[29] Open educational resources are educational and research materials accessible in any environment, in the public domain or under creative common law, that is they can be used freely, adapted, distributed and redistributed by others without restrictions or under limited restrictions (source: O. Voicu - Open Educational Resources for Romania)

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VULNERABILITIES OF CRITICAL INFRASTRUCTURE WITH MILITARY FACETS

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Abstract: *The considerable restructuring of the defence systems is a global feature of the current international security environment, with consequences in increasing the complexity of the military dimension of the critical infrastructure protection activities. The trends toward an integrated management of the national defence and security target the guidelines set up by the NATO and EU and require the assertion of an integrated risk management which should comprise new threats, as terrorism is. The cities are the main targets for terrorists because of their multiple critical infrastructures. The increasing of public safety and security within the city has become a must-have of the incoming concepts of planning, like the safe city or the military urbanism.*

Keywords: *critical infrastructure; risk management; defence system; safe city; military urbanism.*

One of the main trends that induce a major increasing of the cities' vulnerability is the on-going fast urbanisation, expressed by the densification of the compact urban zones and the out-of-control urban sprawl in the metropolitan territory, with consequences over a higher aggregation of the people, economic investments and public services within areas with the highest level of risk. Accordingly, *the cities are the main targets for the terrorists because of their multiple critical infrastructures.* The ideal city has not been established yet but the initiatives for its creation have had as outcomes in time the dismantling of its physical boundaries (the walls of the medieval fortress) and the sprawl in the territory by the setting up of city-region systems (by suburbanization). The current approach of the city development focuses more on the inner function of the city, in terms of urban policies targeting the bettering of the quality of life of the citizens, and less on the outer threats that emerge in the global environment and whose appearances are more and more similar in the most world cities. One of these emerging threats is the terrorism and it has been enhanced by the terrorist attacks from 9/11 in USA. Even if the present approaches on sustainable and integrated urban development promise to solve certain economic, social or environmental problems, a broader awareness on the public safety and security has become outstanding in the last years. It focuses not only on the every citizen's life but also on the high-density built areas and on the infrastructures that are critical for the daily city operations and the connection between the city and its surrounding territory.

Although the concept of *vulnerability*, associated to the infrastructure, has been initially defined within the legal framework on emergencies, it has been recently resized by reference to the issues of the critical infrastructures and consequently redefined in accordance with the attributes of their protection, together with the terms of *threat* and *risk*[1]. The argument for redefining vulnerability occurs from the fact that the purpose to destroy a system targets firstly the critical infrastructures. In brief, any vulnerability of a critical infrastructure is tailored by the proportion between the expectation of the occurrence of a real threat over its optimal use and the estimated consequences. Hence, the vulnerabilities must be always assessed with direct and mutual reference to the threats. Consequently, the risk of a critical infrastructure emerges from the potentiality of vulnerabilities and threats, as evaluated in terms of probability and impact of the happening of the threats enhanced by

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[1] In Romania, they are defined in the *National Strategy on Critical Infrastructure Protection*, approved by the Government's Decision no. nr. 718/2011.

vulnerabilities[2]. The vulnerabilities of a critical infrastructure may be generated by its physical (constructions, facilities or their components) human (staff, visitors, etc.) or informational (IT systems) aggregates. Moreover, the vulnerabilities may occur either within one or several stages of the critical infrastructure life cycle (design, build, operate, management, refurbishment, etc.) and they must be assessed every time with reference to the susceptibility of optimal use capacity to get out-of-service or destroyed, partially or completely, by at least a threat.

For the purpose of taking measures for the critical infrastructure protection, the assessment of the individual and systemic vulnerabilities is an elementary issue[3]. In the case of man-made threats, as terrorism is, an exclusive focus on the vulnerabilities, even if it is essential in terms of cost-benefit analysis, may suppose that the terrorist will always find the same infrastructure as main target. The pitfall is to use the same methods for reducing the vulnerabilities, while new risk scenarios generated by unconventional approaches of the terrorist goals might be skipped. In this respect, the assessment of the critical infrastructure vulnerabilities must rely firstly on the enemy's ability to collect data and to use them in order to find the weaknesses. Nowadays, most of the public sources of information (open data) provide adequate, relevant, and complete data that might be used anytime for an attack against the critical infrastructure systems.

Several vulnerabilities are common to all the critical infrastructures and others are specific for each of them. The common vulnerabilities are generated by the common supply of all the critical infrastructures with electricity and information & communication technologies (ICT), as long as they are designed and built on the basis of IT software or they are controlled and monitored by ICT. Furthermore, the operation of the critical infrastructures depends on the traditional threats, like the breaks of the physical components, occurred by accident or with purpose, and also on the new virtual threats, like DDOS or malicious actions, leak of critical data by espionage or hacktivism, etc., that are facilitated mostly by the strengthening of the systemic interdependencies at the global level. This is the reason for which the critical infrastructure vulnerabilities have to be re-assessed by taking into consideration the double exposure to threats and dangers, which gathers both the physical and virtual elements of each critical infrastructure.

A particular feature with regard to the strength of the systemic interdependences of the critical infrastructures occurs in the case of the EU, from the spatial-territorial interconnectivity of the technical infrastructures of each country into *European critical infrastructures (ECI)*. The provisions for ECI require joint critical infrastructures for at least two countries, hence overpassing the State borders, and appoint the assumption of a higher level of interdependence of the critical infrastructures in the EU countries, respectively a higher level of ICE's vulnerability. Moreover, by the future enlargement of the EU, when new countries will join EU, the number of ICEs will increase and consequently their vulnerability will increase as well. In addition, the critical infrastructures are networked, in every country and in the EU territory too, which implies that the increasing of the vulnerability of critical infrastructures within a country may lead to the increasing of the vulnerability of all critical infrastructures within the region or the network, and their resistance against threats and dangers may increase accordingly, with synergistic effects. The conclusion is that *the critical infrastructure vulnerabilities increase and change as their interdependence and integrality reach upper levels*[4]. Because of the higher dependence on the services provided by the critical infrastructure, the society has become quite vulnerable to the threats and dangers that menace it. Hence, the vulnerability rose up not only because of the outer threats and risks but also due the interdependences among various infrastructures within the relevant systems, and this context enables the disturbances to cause overwhelming damages for the national economy.

The spatial-territorial integration of the critical infrastructure systems, mainly in the EU, requires the interconnectivity of the national strategic infrastructures, with further consequences in every country over the adjustment of the national defence system and the urban and territorial planning system. In Romania, the national defence system consists

[2] Iulian, Diculescu-Blebea; Ionel, Nițu, "Security risk analysis and management in the Romanian Inteligence Service", Revista Studia Securitatis, nr. 2, Ed. ULSB, Sibiu, 2012.

[3] SRI, *Protecția infrastructurilor critice*, Ed. SRI, București, 2010, p. 11.

[4] Grigore Alexandrescu, Gheorghe Văduva, *Infrastructuri critice. Pericole, amenințări la adresa acestora. Sisteme de protecție*, Ed. UNAp, Bucureşti, 2006, pp. 17-23.

of the leadership, the armed forces, the resources and the *territorial infrastructure*[5]. By grouping the components up to their criticality, the national defence system comprises common, special and critical infrastructures. The special infrastructures are performance infrastructure with military specification, holding an important role in the proper function of the military systems by ensuring a higher capacity for operations. The critical infrastructures comprise certain elements, subsystems and functional and operational systems, civil and military as well, which are indispensable to the actional and operational performance and the competitiveness, and to the operational stability, safe use and security of the defence force planning too, not only in peacetime but mainly during wartime, by transposing their main subsystems into capabilities and by ensuring performant operation of the other action, management and logistics elements and subsystems as well, in various situations. The *military critical infrastructures* consist of: military communication networks at strategic and tactical levels; equipment of military airparks and harbours, military units and other locations; networks, pipes, storages and supply systems (fuels, ammunition, food and other primary resources;) military roads, railways and navy transportation infrastructures; storage networks; arsenals; computer networks; IT systems[6].

The material resources for defence are included in the strategic infrastructure, made of physical infrastructure networks that are specialized, efficient and compatible with the European infrastructures, and their development targets the provision of enhanced facilities and capabilities.[7] The *territorial infrastructure* consists of the body of works and territorial planning that are in use for the national defence and comprises all the constructions, works, objectives and amenities which permanently hold or might get, by conversion/adjustment, an use in war or crises, in terms of enhancing the specifications and strengths provided by the natural geographic elements and the catalysis of the maximal capitalization of all the involved forces, and the preservation at optimal parameters of the effectiveness of the national defence system.

As basic and constitutional responsibility, *the preparedness of the national economy and territory for defence* is a component of the national security[8], and is in progress in peacetime and targets to meet the strategic and operative needs of the national defence system forces, by achieving certain objectives that will be exclusively used for defence and by identifying and registering the territorial infrastructure for defence, together with the protection of people and goods too.[9] In the scope of maintaining the territorial infrastructure in proper condition in peacetime, during crises or wartime, it is required the up-grading of the infrastructure by the following: rehabilitation and modernization of the civil and military infrastructures, for keeping their parameters at optimal level; rehabilitation, modernization and further development of the transportation infrastructures, inclusively aerial and maritime transportation; building a modern, viable and safe communication infrastructure, and integrate it into the European communication system; development of the energy transportation system; promotion of the ecological transportation technologies; preparation, modernization and development of the infrastructure amenities supplied by NATO for HNS[10]; promotion of infrastructure projects funded by NATO. It is worth to notice that in all these provisions regarding the preparedness of the Romanian territory for defence there is a special attention paid to at least three national critical infrastructure sectors[11]: *energy, transportation and ICT*, where the former two sectors belong to ECIs too, according to 2008/114/CE Directive.

The implementation of infrastructure projects requires identification and supply of resources from national or international sources, on the basis of program and project development and with the involvement of the institutional bodies with responsibilities in the realm of defence. The existing legislation stipulates obligations of the governmental authorities in drawing up the program on public works and territorial planning for the situations of conscription and war, and obligations of the local government authorities and business sector for obtaining the permit issued by

[5] Romanian Law on National Defence no. 45/1994, art. 6.
[6] Grigore Alexandrescu, Gheorghe Văduva, *op. cit.*, p. 27.
[7] *National Defence Strategy*, art. 4.2.
[8] Law no. 477/2003 regarding the preparedness of the national economy and territory for defence.
[9] Government's Decision no. 370/2004 for the approval of the Methodological norms for the application of Law no. 477/2003, art. 51-53.
[10] *Host Nation Support* is the civil and military assistance provided by an HN to the forces located in or transiting through that HN's territory.
[11] As they are appointed in the Government's Ordinance no. 98/2010 regarding the identification, appointment and protection of critical infrastructure protection.

the General Headquarters (SMG) for building new investments or for the development of the existing ones, in the scope of framing them within the national defence system infrastructure[12]. As a conclusion, the territory defence planning is strongly related to the territorial infrastructure, respectively to the elements of the urban and territorial planning, and the national defence system infrastructure relies on the provisions and regulations stipulated in the urban and territorial planning documents, which are subject to the approval by SMG as well.

The major reform of the defence systems within the last two decades is a global feature of the international security environment, highlighted by the post-World Wars transition towards the 4th and 5th generation of modern wars, as the hybrid war is nowadays. The reform has consequences over the increasing complexity of the military dimension of the critical infrastructure protection activities, and this raises up a broad interest for the military facets of the critical infrastructure vulnerabilities. At the strategic level, these changes are underlied by the NATO' policies and supported at the regional and national levels by specific programs. NATO's concern for the critical infrastructure protection has started in 2001 and has been reconfirmed in 2007 by the *Report on the Protection of Critical Infrastructures*[13]. In 2003, the *Senior Civil Emergency Planning Committee (SCEPC)* enacted *Concept Paper on Critical Infrastructure Protection*, with the aim to support the development of tools to be used in the preparation and management of the consequences of nuclear accidents or natural disasters over the critical infrastructures. NATO' activities in this scope are comprised in the *Civil Emergency Planning Action Plan* that focuses on the nuclear terrorism risk as well. Another pillar of NATO' policy is the *Programme of Work on Defence against Terrorism*, enacted in 2004, which targets the promotion of the latest technologies for the protection of military assets and armed forces. The critical infrastructure protection is one out of the ten priorities set by this Program. The proposed activities target the use of military know-how, technologies and capabilities for strengthening the protection of strategic locations on the territories of the allied countries, inclusively airports, nuclear plants, communication networks, etc., and within the combat zones too.

NATO's focus on the new security risks is also expressed in the *New Strategic Concept* (2010), where the cyber-attacks are considered as a threat to the national and international security; the *Cyber Defence Concept and the Action Plan* (2011); the *Enhanced NATO Policy on Cyber Defence* (2014), and the topic of cybersecurity is currently debated by several working groups and committees within NATO, with a stronger role since 2013 regarding the improvement of the cyber defence governance within NATO.

Another involvement of NATO in the realm of critical infrastructure protection occurs from the *Smart Defence* initiative[14], that supports the promotion of infrastructure projects funded by NATO, with priority for critical infrastructure protection like: transportation infrastructure, utilities infrastructure (inclusively energy), ICT infrastructure and public services and facilities infrastructure (inclusively health), which are needed for HNS as well.

A distinct issue rises from the European dynamic supported by the *European Security and Defence Policy* regarding the building of joint political and military bodies[15] with the aim to implement the concept of European *common defence* which includes the crisis management with the help of civil and military means able to allow EU to accomplish a common effort towards the common defence and security, within a broader vision, in complementary with NATO's policies. The subsequent objectives of these approaches target that each country should develop an optimal defence capacity, adequate for providing an efficient response to the challenges

[12] In accordance with the Government's Decisio no. 62/1996 regarding the approval of the List of investment and development objectives, and the criteria for the implementing these ones, for which the General Headquarters' permit is compulsory, and with the Common Order of MLPAT, MI, MApN, SRI no. 34/N/3422/M.30/4221/1995 for the approval of the Specifications regarding the approval of the urban and territorial documentations and of the technical documentation for construction permitting.

[13] NATO Parliamentary Assembly, *162 CDS 07 E REV 1 – The Protection of Critical Infrastructures.*

[14] The concept of Smart Defence was introduced by the NATO Secretary General, Anders Fogh Rasmussen, at the Munich Security Conference in 2011, as a concept that encourages Allies to cooperate in developing, acquiring and maintaining military capabilities to meet current security problems in accordance with the new NATO strategic concept. Therefore, Smart Defence means pooling and sharing capabilities, setting priorities and coordinating efforts better.

[15] Political and Security Committee (PSC), EU Military Committee (EUMC) and EU General Headquarters, and the forces: Rapid Reaction Force operated by the EU (EUFOR), EUROCORP, EUROFOR and EUROMARFOR.

of the current security environment, on the basis of the principles of political dialogue, cooperation and partnership, and in accordance with the specific policies of NATO and EU.

In the case of Romania, the programmatic documents in the realm of national defence, among which are the *National Defence Strategy* (2010) and the *Army Transformation Strategy* (2007), target the aim of ensuring the national defence by the development of an optimal defence capacity and the modernization of the military infrastructure, the betterment of the methods and practice of defence resources management, the improvement of the efficiency of the planning, programming, budgeting and evaluation system, the decreasing of the armed forces capacities, and the progress of transition from the threats-based planning to capabilities-based planning. Hence, the defence planning requires an integrated management of the defence resources, adjusted to the actions allocated to the objectives regarding the transformation of the country's defence capacity, which include: the development of infrastructure elements able to provide proper capacities of dislocation, deployment and training for the national forces and NATO forces; building an integrated anti-missile defence system, based on capacities of missile detection and interception; the restructuring, streamlining and capitalizing of the national defence industry. The relationship security – prosperity – identity from the security matrix, as it is defined in *National Defence Strategy,* underlies the need for approaching the human and territorial security by an integrated manner of the convergence of the defence planning and the urban and territorial planning. As a consequence, from the components and the guiding priorities of the integrated planning, it occurs that a particular attention is paid to the betterment of the defence resources system management. In this respect, a consistent contribution might be provided by the adjustment of the urban and territorial planning' activities to the needs of the defence resources, by streamlining the assignment of compulsory resources for the highest importance assets for the national defence and the proper function and stability of the society and economy, as the critical infrastructures are. The opportunity of taking into consideration these ongoing contributions is supported by the agreed participation in the fight against terrorism as well, as a priority of the national defence policy. In order to increase the efficiency of the defence resources management, a high interest topic that is raised nowadays is the *development of double-use industries* (civil and military uses), by transferring technology and military research&development experience, and by the physical transfer of equipment and staff from military units to civil companies. This trend of transfer from the military realm to civil industries is supported by the increasing need of facing the mutations occurred lately in the security environment, which consists in the flourishing of enemies who threat both the military assets and the civil infrastructures, able to take action in peacetime and in crisis and wartime as well. Furthermore, the reconversion of military assets (like military roads, military units, etc.) into civil assets requires the amendment of the operation conditions in the civil scope up to the technical and military parameters from which those assets originate. As a consequence, the up-dating of the activities that target to enhance the critical infrastructure protection should primary focus on the adjustment of the military infrastructure protection to the scope and particularities of the civil critical infrastructures and should encompass the import of specific military elements (for design, build, control, etc.) into the action plans for civil critical infrastructure protection.

An additional challenge is generated by the status of ownership of the critical infrastructure systems. The State is in charge with the national security, and its involvement within the economic and social environment is basic from the security perspective. Nevertheless, in a large number of countries, whole critical infrastructure systems were privatized. Consequently, these infrastructures are currently owned by private companies that also hold the responsibility of protecting them. Therefore, in every country, the critical infrastructure protection activities are provided by several agents, from both the public sector (authorities from the central government and the local government, public agencies) and the private sector (business companies, as owners and/or operators of the critical infrastructures). However, the multiplication of the warnings regarding the terrorist threat, which target mainly the critical infrastructures, and the stepping up of the awareness of the potential devastating consequences of the natural disasters, force more and more the governments to review and amend the policies on the protection of people and critical infrastructures. In most of the cases, this trend

emphasizes two dimensions for the coordination of the critical infrastructure protection activities: horizontal coordination (inter-ministries) and vertical (local-county-central levels of authorities) of the responsible public bodies, and coordination between the public authorities and the private owners/operators of critical infrastructures, by supporting the development of public-private partnerships.

In line with the abovementioned matters, the current trends towards a military-civil and public-private integrated approach of the critical infrastructure protection, with the goal to streamline the subsequent activities, is framed by the policies on the *integrated security management*, which includes the development of national capacities for the management of national and international crises and emergencies as well, and should be based on an *integrated risk management*. These trends converge to the priorities set up by the *Romanian National Security Strategy* (2007) and the objectives of the *EU Internal Security Strategy: towards a European Security Model* (2010). Moreover, the proposals for implementing the concept of *urban regeneration* in Romania include the raising of the security level for citizens, by taking actions like the design of more attractive and less risky public open spaces.[16] Nevertheless, even if the new approach promoted by the European Commission in regard of the security objectives related to the risk management has already been implemented up to now in 11 countries (UK, Netherlands, Sweden, Denmark, France, etc.), by the approval of *safety and security national plans* which enclose criteria and complex scenarios on prevention and management of current risks, inclusively the risks generated by the terrorist threat, Romania still misses a similar national plan or strategy.[17]

The military forces generally play only a supportive role in the critical infrastructure protection, focusing mostly on the consequence management, which is after the occurrence of an emergency. However, certain countries authorise the use of military forces as additional patrolling forces which can join the police forces, in the stage of prevention and monitoring of the critical infrastructure conditions, as for example in the airports or the public transportation system, or for the safeguard of large public events, as sports or concerts in open spaces. These preventive actions are expected to deter any terrorist attack plan. For example, in February 2003, at London's Heathrow airport, when a strong military presence was deployed in response to intelligence reports suggesting that al-Qaeda terrorists might launch surface-to-air missile attacks at British or American airliners. Also, these types of actions are routinely taken in France, in the framework of the VIGIPIRATE Plan.[18]

The reconfiguration of the national defence and security systems, by approaching the critical infrastructure protection activities in an integrated manner, has a significant impact mainly at the spatial-territorial level by the restructuring of the territorial infrastructure, as referred to the principles of urban and territorial planning. This type of impact has lately occurred in terms of new concepts, like the *safe city* or the *military urbanism*.

The concept of *safe city* focuses on increasing the public safety and security within the city with the goal to reduce the urban criminality. There is no unique formal definition for the safe city, as the safe city is conceptualized as a sum of the main initiatives and projects designed for increasing the safety of its citizens. In certain approaches, the safe city is considered as the safety & security component of the *smart city*, being completely integrated within it. In other approaches, the safe city highlights the imperative of bettering the city by ensuring maximal security for most of its elements, mainly the components of the critical infrastructures, irresponsive to the implementation of distinct smart projects. The elements of the urban environment that require priority measures for their permanent protection are: the transportation system (roads, railways, etc.), the public open spaces (squares, green areas, etc.), the landmarks (mainly the governmental buildings) and the utilities (supply of water, energy and natural gas, telecommunications, etc.). For securing these elements, a spe-

[16] MDLPL, *Ghid informativ privind regenerarea urbană – principii și practici europene*, MDLPL, Bucureşti, 2007, p. 25.

[17] European Commission, *Overview of natural and man-made disaster risks in the EU / SWD(2014) 134*. Available from: http://www.sos112.si/slo/tdocs/eu_risks_overview.pdf. Accessed: 20 March 2015.

[18] VIGIPIRATE is France's national security alert system. Until 2014 the system defined four levels of threats represented by five colors: white, yellow, orange, red, scarlet. The levels called for specific security measures, including increased police or police/military mixed patrols in subways, train stations and other vulnerable locations. In 2014 the levels were simplified to 'vigilance' and 'attack alert.

cial attention should be paid to their specific spatial and functional features, in addition to the dynamic elements (like the high mobility generated by the traffic flows) and the variables that arise from the assessment of the vulnerabilities and threats against them.

If considering the safe city as a component of the smart city, the main objective that targets the increasing of the safety and security lies in the extension of ICT use within most of the homeland security infrastructures and services and in the introduction of new standards and regulations for constructions, public equipment and facilities, with the aim to reduce the vulnerability of the urban areas to inner and outer threats against them.

The up-grading of a city up to a safe city will presume to take actions as the following: the permanent monitoring of the technical infrastructures (by using CCTV surveillance systems, environmental sensors, biometric sensors, wireless sensor networks in the public spaces and buildings, and setting up access and control points and control networks with wireless technology, software for activating the mechanisms by phone or internet, etc.); the use of integrated heterogeneous smart systems (*Cyber-Physical-Systems*[19]) like motion detection and video surveillance systems, communication resilient networks, integrated emergency response systems, inclusively early warning sensors for disasters, etc. Up to present, several initiatives of developing European safe cities have been implemented, most of them with financing support from the EU funds, as for example *Safe City*[20] or *FIREBALL*[21]. One of the well-known projects is *SAMURAI*[22], developed in 2008-2011 in UK, with the aim to develop and integrate an innovative surveillance system for robust monitoring of both inside and surrounding areas of a critical public infrastructure site, where people gather (airports, underground platforms, etc.). These systems comprise networked heterogeneous sensors which build multiple complementary sources of information, online adaptive behaviour monitoring system for real-time abnormal behaviour detection and triggering of context-aware alerts in assisting the prevention of crime and integrate fix-positioned CCTV video input with control room operator queries and mobile sensory input from patrolling staff.

Initiatives for securing the urban environment, mainly the public open spaces and the governmental buildings, have already been institutionalized in several European states. For example, the UK planning system has been up-graded in 2004 by the *DCLG Planning Policy Statement* entitled *Safer Places – The Planning System and Crime Prevention*, lately up-dated as *Crime Prevention through Urban Design and Planning (CPTED)* which approves a guide of norms and regulations on urban design and planning, that mainly targets to reduce the crime potential and to increase the feeling of safety of the local community. Hence, the urban planning system becomes an important agent in changing the criminal behaviour by modelling the urban environment in a way to deter out from crime and fear, since the early stage of design of the urban place. The guide synthetizes the features of a safe city to 7 key principles:

- Access and movement: Places with well-defined routes, spaces and entrances that provide for convenient movement without compromising security;
- Structure: Places that are structured so that different uses do not cause conflict;
- Surveillance: Places where all publicly accessible spaces are overlooked;
- Ownership: Places that promote a sense of ownership, respect, territorial responsibility and community;
- Physical protection: Places that include necessary, well-designed security features;
- Activity: Places where the level of human activity is appropriate to the location and creates a sense of safety at all times;
- Management and maintenance: Places that are designed with management and maintenance in mind, to discourage crime in the present and future, what attracts people to the public realm uphold its

[19] *Cyber-Physical-Systems* (CPS) is a system of collaborating computational elements controlling physical entities. Unlike more traditional embedded systems, a full-fledged CPS is typically designed as a network of interacting elements with physical input and output instead of as standalone devices.

[20] Available from: http://www.safecity- project.eu/index.php/mod.proyectos/mem.detalle/id.19/relcategoria./relmenu.3/chk.19353c5bb6e7dcf9f6f4b92d15674c81. Accessed: 15 March 2015.

[21] Available from: https://vimeo.com/fireball4smartcities. Accessed: 15 March 2015.

[22] *Suspicious and Abnormal Behaviour Monitoring using a Network of Cameras and Sensors for Situation Awareness Enhancement.* Available from: http://cordis.europa.eu/result/rcn/45790_en.html. Accessed: 15 March 2015.

attractiveness[23].

The crime prevention through environmental design has become a concept broadly spread in Europe, as it is implemented in other countries[24] and strongly supported with EU funds allocated for projects like *DESURBS – Designing Safer Urban Spaces* or *COST – Crime Prevention through Urban Design and Planning*. This kind of projects are framed within the regulations for urban safety and security set up since 2007 by the European Committee of Standardization in the Technical Report *Prevention of Crime by Urban Planning*.

As a conclusion, the implementation of this type of guides on urban design and planning proves a pro-active approach of the safe city development, from which all the construction or landscape projects should start on, and hereby replace the re-active approach which is intensively promoted nowadays through the addition of ICT in most of the public safety and security systems. The design and build of safe public spaces, buildings and infrastructures may be definitely achieved if security elements are comprised within them since the very beginning. Consequently, the later insertion of surveillance systems (as CCTV) remains only an option from the safety toolbox prepared for reducing the vulnerability to crime threats or crises.

Besides of the evidence that objectives that target the increasing of the homeland safety and security have become part of the most national defence and security strategies all over the world, by following the model of USA *Patriot Act*[25], through which the capacities of police forces and security agencies have been strongly developed in order to trace the terrorist activities since an incipient stage, there are some analysts who warn on the danger of over-securing the cities and the diversion of the urban development planning towards *military urbanism*.[26] This trend is justified from the perspective of oversupplying the urban environment with public safety actions and equipment. One of the arguments is provided by the use in the urban environment of military technologies and software, which were expressly designed for the battlefields and combat zones. Despite of their military origin, they are considered to be useful, either in peacetime or crises or emergencies, in the scope of increasing the public safety in the city. Examples of these types of technologies are the tracking and surveillance systems, like *Visibuilding, Combat Zones That See (CTS)*[27] or performant drones and radars, like *Multipath Exploitation Radar Program* (*MERP)*[28].

Another argument is supported by the latest mutations in the urban environment morphology through the rise of *enclave-spaces*, in a modern version of the historical defence structures. Examples of enclave-spaces are the residential gated communities, the leisure centres and tourist areas with exclusive character, refuges or immigrants' camps, prisons, military bases, airports, stadiums, mixed-use halls, and other types of constructions which address to accommodate masses of people.

As a conclusion, one of the main issues that must be taken into consideration in approaching the critical infrastructure protection, either civil or military, is the assessment of the common elements generated at the convergence of the realms of urban and territorial planning and of national defence and security, respectively the elements which are common to both the territorial infrastructure and the defence infrastructure. The perspectives of the ongoing fast technological development claim for digitalizing the city, mainly in its critical sectors, like transport, energy, health care or water supply, and target to enhance not only the efficiency of public services delivery but the security and the safety of the whole city as well. As the quality of urban design and planning is an urban security measure by itself, inclusively for the critical infrastructure located within the urban environment, it is worth paying attention to the imperative requirement of setting up an integrated risk management with focus on the critical infrastructure protection, by taking into consideration methods of urban design and

[23] The Royal Borough of Kensington and Chelsea, *Designing Out Crime*, 2008 [online]. Available from: http://www.rbkc.gov.uk/pdf/designingoutcrime_spd.pdf. Accessed: 15 March 2015.

[24] See *International CPTED Association*. Available from: http://www.cpted.net/. Accessed: 7 March 2015.

[25] *USA PATRIOT Act (Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act)* is the main USA law on terrorism prevention. It was enacted in 2001 and completed in 2011by the PATRIOT Sunsets Extension Act.

[26] Stephen Graham, *Cities Under Siege: The New Military Urbanism*, Ed. Verso, London, 2010.

[27] *Combat Zones That See* is a project of the USA Defense Advanced Research Projects Agency (DARPA) whose goal is to "track everything that moves" in a city by linking up a massive network of surveillance cameras to a centralized computer system

[28] *Multipath Exploitation Radar Program* (orig.) is a project of the USA DARPA with extended capacities to reach of airborne sensor platforms beyond Line-of-Sight (LOS) limits by peering deep within the shadows of urban canyons.

territorial planning that could consistently contribute to reducing the vulnerabilities and consequently preventing the danger forecasts from the current threats against the critical infrastructures.

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LAND FORCES IN THE FUTURE OPERATIONAL ENVIRONMENT

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Abstract: *The complexity of the operational environment generated by new risks and threats makes military structures to seek new ways of dealing with conflict in the future. Although the analysis indicates that the possibility of a traditional interstate conflict for Romania appears to be minimal, despite the new conflicts that occurred near the borders of our country, state-versus-state conflicts are still possible worldwide. However, future conflicts will most likely continue to have a hybrid character and manifest through domestic violence, terrorism, insurgency and criminality, as well as through land battle. To the challenges identified above, ground forces will have to develop the conceptual, organizational and human dimensions.*

Keywords: *land forces; operational environment; conflict; risks and threats.*

Introduction

The latest events that occurred in the international environment are a confirmation of a well known fact concerning the nature of conflict which is its fast evolution. Unfortunately, this rapid evolution often involves a constant grow of the complexity of the operational environment in which land forces act, alongside the other national security components.

Of course the complexity of the battle space is not a new concept either and derives from the fact that war is essentially a human activity. It emerges from the number of soldiers and weapon systems and their interaction with the enemy, terrain and population. The human, psychological, political and cultural dimensions of the conflict combined with the specificity of the local environment result in uncertain and complex conditions for land forces to operate in.

Taken in the account the assertions above it is obviously that in order to deliver an adequate answer to the new challenges of the security environment, future land forces will have to reconsider their conceptual approaches and tools. This re-evaluation initial point must be to thoroughly analyse the current and future threats and risks, then to redefine the future conflicts character, in the same time with a close examination of the factors that influence land operations. Once these three elements are correctly described we can adapt the conceptual approaches to operations of the land forces and redefine their future roles in the future environment.

Even if this study is concentrated on the specificity of land environment we must not forget that the potential of military forces derives from a number of other elements too, such as: the critical importance of joint operations, close collaboration with other governmental agencies, allies and partners. Also this analysis is a starting point for discussions with allies and international agencies as future operations will most likely be combined, joint, intra-governmental, inter-agency and multinational (CJIIM).

Threats and risks

The international security environment as described by the National Security Strategy is constantly changing and, while some tendencies can be foreseen by the existing programmes and strategies, other remain uncertain.

Thus we can state that, while there is no predictable future, a pattern can be established using precedents, change resistant elements, and modelling, experimenting and analysing tendencies even if the result will maintain a speculative character. The only obviously thing is that the world becomes more and more complex due to the rapid movement of ideas, peoples, capital and information, the spreading of global networks and the growth of multi-polarity. Human interaction

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is another element that also becomes more fluid as a direct consequence of the communications technologies revolution.

Even if the operational environment is characterised by volatility and uncertainty, there is no obvious or apparent large scale threat to the security and freedom of Romania. The probably of a traditional inter-state conflict, despite the new emerging conflicts near our borders, seems to be minimal for Romania, but has not vanished globally. State-on-state conflicts are still possible due to regional rivalries and the contraction of U.S. military and global hegemony.

As part of an inter-governmental approach, national defence needs the ability to focus not only on the security threats and risks identified by the National Defence Strategy, but also on a better evaluation of the factors affecting the operational environment, in order to determine the root causes of and catalysts for the conflict that produce these threats. More than that, a better cultural understanding and the influence of political and strategic situations, as perceived by the adversary, is critical.

Future conflicts will most probably keep their hybrid character and their manifestations through domestic violence, terrorism, insurgency or criminality, as well as land battle. Organised crime network, migration and extremism are a seriously international security threat and it is multiplied by the power of internet which plays a leading role in connecting the criminal and extremism elements offering them the ability to operate and respond flexibly. In this context, we can state that the threat of internet attacks, orchestrated by motivated and capable individuals, as well as state actors, will probably increase, thus the dependency of national security system to new emerging technologies being both an advantage and vulnerability.

In the context of the participation of land forces to multinational operations to manage conflicts abroad, there is a high probability that they will be engaged in all dimensions of the battle space, by adversaries with different capabilities, ranging from rudimentary and unsophisticated defence systems to well integrated and layered ones. The emerging of adversaries that combine insurgent organisation and tactics with last generation technologies further complicates the operational environment, thus asymmetric response to a conventional force in the future might include unmanned vehicles or surface-to-surface ballistic missiles.

The proliferation of weapons of mass destruction amongst states and non-state actors will escalate the risk of conflict, so it is probable that land forces will fight against enemies that use chemical, biological, radiological, and nuclear weapons. This means that land forces must have the necessary capabilities to deter, defend and counter such attacks.

Other risks that could transform into threats to national security are the struggle for resources, in the context of the constant growth of population, the emerging of new economies, political instability, uneven distribution of access to resources, and the growing risk of man made disasters, all of these leading to the necessity of humanitarian operations.

Whenever we analyse the manner in which land forces will operate there are some factors that need to be taken into account: terrain, political, diplomatic, economic, legal, military, technology, human resources, logistics and information.

Conceptual approach of land operations

Having established the context in which land forces will operate and taking into consideration the factors that will influence their actions we can establish the conceptual framework within which future land forces will conduct operations.

One of the main concepts of this framework is the manoeuvrist approach, seen as an indirect approach with the purpose of influencing the adversary's behaviour in order to achieve the objective, not as the classic movement of troops in the field. It is a tool that focuses on understanding and targeting the conceptual and moral components of the adversary fighting power and represents the "supreme excellence" of the famous Chinese strategist Sun Tzu quote "*to fight and conquer in all our battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting*".

Manoeuvrist approach has long been considered the most effective way to defeat an opponent and has evolved to place understanding and influence at the centre of the philosophy. It focuses on applying strength against vulnerability and recognizes the importance of cohesion and will, in ourselves, our allies and our adversaries.

Manoeuvre is now multi-dimensional; it is about seeking to gain advantage over an opponent in the information dimension, including cyberspace, as

well as the traditional dimensions of maritime, land and air. This in turn requires the integration at a lower level of a greater range and complexity of capabilities, including joint, inter-agency and multi-national, with many of these previously regarded as exclusively for use as operational and strategic level assets. When manoeuvre is conducted amongst people and the infrastructure that sustains them, it makes influencing perceptions the central factor in success. This manoeuvring of the mind, rather than just physical movement, is a key element of the manoeuvrist approach.

Another conceptual framework within which land forces will operate is the ***Understand to Influence*** framework, which is based on the idea that even if the main purpose for armed forces is to fight, they should also be able to threaten to use, or manipulate the idea of force to shape perceptions and secure influence in pursuit of national objectives.

This framework has three essential, interdependent components of statecraft: understanding, power and influence, and highlights two imperatives: the need for exploitation and the critical requirement to seize and use the initiative.

The capability to understand and to process information, combined with the application of power, produce the output of influence, because warfare, in all its aspects, is essentially about influencing human beings and their perceptions. In short, the greater the level of understanding, underpinned by the ability to apply power, the greater the ability to influence.

The need to understand is at the core of every operation as understanding provides the context for making effective decisions, applying power and managing associated risks as well as subsequent effects. Sufficient understanding of the full environment is vital for: preventing or deterring conflict; pre-empting threats; conducting risk assessments; developing good tactical comprehension; effective capacity building; and delivering an effective strategic narrative.

As for the power, it is defined as the factors that enable one actor to manipulate another actor's behaviour against his preferences and represents the primary means by which states, and other actors in the international system, are able to pursue their security influence. In short, power is the ability to influence people or change the course of events.

A force that is capable of conducting an effective land operation represents an important source of power and has the role of discouraging potential adversaries. If the end state can be achieved by persuasion rather than coercion, or prevention rather than intervention, the course of implied force, rather than applied force, should be taken. However, no such implication of force is credible if it is not reinforced by intent and capability. If the implication of force fails to influence sufficiently, there will be no choice but to apply it.

Influence, as a component of the conceptual framework, is not just about messaging and media, but how audiences interpret and understand our words and deeds. The committal of military force has a profound influence, and the understanding of the influences the land force wishes to have from the outset, need to be planned, and then orchestrated, across all military activities. This is particularly the case for land forces operating where all actions are closely observed, and effects are nuanced. Small sub-units, or individuals, can have disproportionate effect from the tactical to the strategic level through their actions and, over time, land forces have a persistence and closeness that allows deep and enduring influence to be established.

The future roles of land forces

In order to efficiently accomplish the demands and meet the challenges described above, land forces will have to develop forces capable to deliver three overlapping purposes. The first requirement is to construct a professional and highly capable land force which is able to conduct complex combined arms operations and the full range of missions and tasks set by the National Defence Policy.

Secondly, deriving from the first requirement, land forces needs a flexible force structure capable of operating in a multi-national environment and accomplishing specific missions in a theatre of operations. This requirement also includes activities such as common training and exercises, experience exchange visits and other forms of interaction that will lead to foster cooperation in the defence field with member states of the alliances and regional initiatives in which Romania is part of.

The third purpose is the capability of land forces to support local and central civil authorities in managing the situations for which they are mandated, especially disaster relief. Therefore, well trained, equipped and led land forces will form the central capability across the full spectrum of conflict.

Future land operations are likely to use highly mobile air and ground forces to exploit information gained from a wide array of manned and unmanned ground and air sensors, as well as network analysis, communications interception and cyberspace monitoring. As previously shown, the manoeuvre will have a multi-dimensional character with influence being the principal result. Adversaries will seek to deny freedom of manoeuvre of friendly forces ranging from the physical terrain to cyberspace, and will seek to attack the command and control, as well as logistic networks. It is likely that military forces, including land forces, will require troops trained, and equipped, to undertake defensive and offensive cyber operations.

Obviously, a key capability will be a coherent intelligence, surveillance and reconnaissance system, but the rapid evolution in this domain has to be balanced to ensure the continued relevance of combined-arms manoeuvre, and fire and movement. Adversaries will probably seek to counter technological advantages using new, asymmetric methods, this fact requiring the adoption of new approaches such as: air defence against unmanned air systems, a reinvigorated effort towards chemical, biological, radiological and nuclear defence and capabilities to deny the adversary access to, and exploitation of, the electro-magnetic spectrum.

The term Intelligence, Surveillance, Target Acquisition, Reconnaissance (ISTAR) needs to be re-examined and re-evaluated in order to reflect the operational requests. There is a need to return to more precise language of reconnaissance as the primary means of observing to locate and ascertain. However, reconnaissance is more than just "scouting", it will be about engagement, comprehension (situational awareness and analysis) and understanding (comprehension and judgement). Reconnaissance assets must develop and exploit the tactical situation, not just find the exploitable gaps by traditional means.

Even if mechanised infantry will be a core capability around which the manoeuvre will be build, the complexity of the future battle space will require the use of small and robust combined-arms teams able to fight dispersed. Also, mobility support will be a critical element and so engineer support, especially assault engineers, will be much more requested to fight within complex environments, such as urban terrain.

Armour, with its protection and ability to provide precision fire, will be required primarily to provide intimate support to dismounted infantry, although armour should continue to be capable of defeating an adversary by shock action and ground manoeuvre. Control and integration of joint and organic precision fires, both physical and virtual, will have to be co-coordinated and synchronised as far down as sub-unit level.

From the command and control point of view, the demands of the future operating environment are such that small and mobile formation headquarters are likely to be unable to collate, process and disseminate the level of information and understanding required to generate the mixture of comprehension and agility that is needed to retain the initiative in complex modern conflict. Land forces are likely to be geographically dispersed and decentralisation is likely to be the operating principle through networked command and control. There will be a need for flat information structures and rich information services available at the tactical level.

Finally, in the future operating environment there will be significant compression and blurring between the tactical, operational and strategic levels, thus campaign planning tools, designed to manage complexity at the operational level, will be required routinely at the tactical level. Increased weapon ranges and more capable communication systems have expanded the scale of the battlefield exponentially so what was once corps and above battle space is often now within the capabilities of a division.

Conclusions

The character of war will continue to change and evolve, but many of its features, especially those linked to the human nature, will remain. The future will continue to be characterised by uncertainty, complexity and volatility, so that the future land forces will have to be able to fight and operate in complex environments, and to be adapted to deal with the diverse character of the future conflict by applying the new conceptual framework philosophy.

The complexity of modern conflict, allied to the dynamic nature of the information environment, demands an adaptable and integrated approach with a land force capable of regenerating to meet the inevitable requirements for sufficient mass, balance, persistence and specialism. With technology

enabling the greater volume and integration of information, future land forces must develop greater expertise and capabilities in information management, exploitation and assurance.

Capability planning will need to develop a land force that is balanced so that it can efficiently adapt to emerging threats and risks. To achieve this, critical capabilities will need to be identified, maintained and developed, along with those that that can be preserved and used only when required and with those that can be permanently deleted.

Future adversaries will probably attempt to exploit the vulnerabilities of the cyber space dependence, so the land forces personnel will have to understand these vulnerabilities and actively train and prepare to be able to maintain the freedom of manoeuvre in all domains. Due to future threats and risks from cyber space there is a need for resilience and capable communication and information systems that can be rapidly reconfigured in order to maintain operational capability of land forces. There will also be a need for specialised forces capable of conducted cyber defensive and offensive actions in order to ensure the security and integrity of the command and control system.

A strong moral component of fighting power and military discipline will remain a mandatory requirement for future land forces, investment in education will help to ensure that the future leaders will be able to operate with modern concepts such as manoeuvrist approach and understand to influence.

Combined-arms manoeuvre remains at the heart of the use of land fighting power, but the future force must structure, equip, train and operate not just with all of the traditional tools, but also with an ever-increasing range of capabilities (like cyber), and in closer concert with the other services.

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THEORETICAL ASPECTS REGARDING THE CRISES AND CONFLICTS IN CONTEMPORARY INTERNATIONAL RELATIONS AT THE BEGINNING OF THE XXI CENTURY

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Abstract: *The approached issue regarding the crisis and conflicts in contemporary international relationships at the beginning of the 21st century is very vast and complex both from the political, social, economic, and military point of view. This requires a profound and systematic analysis to define the main concepts of decision makers who need to generate conservation or transformation strategies of the geopolitical system in order to bring it back to the state of functional balance and crisis exacerbation in a state of conflict.*

Keywords: *crisis; conflicts; globalization; international relations; risks; peace theory.*

Globalization and the theory of the democratic peace have transformed the international relations, removing the traditional policies of asserting power in the national agenda of most actors.

Lately, the emergence of new risks, crises and conflicts has caused instability at the regional / global level to gain ground and to resort more often to the use of military means.

Today, the world faces many increasingly complex problems whose solution requires the involvement of states and organizations with tasks in the security field.

The intensification of the crisis between states has inevitably led to increasing the international disputes. This phenomenon appeared particularly often, with almost regular frequencies and it has its origins mostly in history, but it can also occur as a result of the evolution of society and international life at a time.

The ***crisis*** is a multidimensional phenomenon, but in most cases it is analyzed by the interdependencies between violent effects it produces and its other dimensions. These connections are defining in the crisis management strategy modeling and are expressed by concrete policy developments which aim at imposing a certain conduct.

Globally, the political analysis reveals the fact that the world of this beginning of century and millennium, is subject to a complex process of redefining the international relations.

The results of these analyzes reduce the danger of triggering a major military confrontation and the development of a climate of cooperation and partnership, with the objective of shaping a new security architecture that respects the values of democracy, freedom, human rights, rule of law and economy market.

In the context of contemporary international relations, crisis is a phenomenon that can occur in a dispute and /or conflict of interest between two or more parties that will most often be states, but can obviously be nations, groups or even international bodies.

The crisis, although it is a complex phenomenon, in most of the cases is analyzed by the interdependencies between the violent effects it produces and its other dimensions. Currently, these connections are defining in modeling the analysis mechanism and crisis management and are expressed by developing concrete strategies that aim to impose a certain behavior.

Before defining crisis, it is very important to know the origin of the word and where it comes from.

Studies show that the origin of the word *crisis* comes from the Ancient Greek. The verb *krinein* verb has the meaning: *to separate, to judge, to decide*. Over time the Greek word, *krisis* suffered successive changes, but the etymology is linked to the notion of judgment or decision[1]. Consequently,

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[1]Vasile Simileanu, *Crizele şi conflictele spaţiului islamic,* Editura Top Form, Bucureşti, 2009, p. 77.

there is no crisis without the need for decision ad without a prior judgement.

In the dictionary of the Romanian language, the crisis is defined as a *"manifestation of some difficulties of economic, political, social type etc.; disorder and testing period that manifests itself in society."*[2]

Political theory interprets the crisis as an immediate change, due to strong disorders in social life, characterized by special sharpening of the existing contradictions and antagonistic forces clash.

Charles Herman, an expert in international political studies, defines crisis as *"a situation that threatens the high priority targets for the decision-making unit, restricts the time available for a response before the situation is changed and, when it occurs, it surprises the decision unit members"*[3].

Michael Brecher, a professor of political sciences (McGill University, Montreal, Canada), defined the crisis as *"a situation characterized by four necessary and sufficient conditions, as they are perceived by the decision makers from the highest level of the implied actors: a mutation in external or internal environment; a threat to core values; a high probability of involvement in hostilities mainly with the military character."*[4]

According to Barry Mc. Longlin crisis is *"an event, disclosure, charge or a set of internal and external problems that threaten the integrity, reputation or the existence of an individual or organization"*[5]

From the sociological point of view, the concept of crisis is *"a time in the dynamics of a system characterized by a sharp accumulation of difficulties, tensions outbreak of the conflict, making it difficult for normal operation, triggering strong pressures for change"*[6].

Referring to the international situation, General Beaufre defines crisis as *"a state of tension in which there is a maximum risk of an escalation into an armed conflict, in which the opponent will be prevented from acquiring a certain political or military advantage; so this advantage is the stake of the crisis for the defender, minimum risk"*[7].

Alastair Buchan, former director of the British Institute of Strategic Studies, referring to the geopolitical crises has made the following statement: "the conflict period between two or more states which occurs when one party attacks the other on a precise point or as it can be defined as when they have to take a decision on the reply that must be given to this defiance"[8].

Jean-Christophe Romer considers the crisis as *"a moment of rupture within a well-organized system. It involves the obligation of the decision makers to define a position either for conservation or for transforming a given system, in anticipation of its return to equilibrium"*[9]

In the security field there are a variety of definitions of crisis, from those developed by specialists in security studies to those from the official documents of security institutions. An example of this is the North Atlantic Treaty Organization, defining the crisis as *a situation manifested at national or international level, which is characterized by the existence of a threat to values, interests or main goals of the implied parties*[10].

In the NATO Crisis Management Handbook, crisis is seen as a *"national or international situation, where there is a danger of giving priority to values, interests or purposes of an implied party"*[11].

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[2] *** DEX - *Dicţionarul explicativ al limbii române*, Ediţia a III-a, Editura Univers Enciclopedic, Bucureşti, 2009, p. 241.

3 Herman F., *Crisis* în Foreign Policy. A Simulation Analysis, Indianapolis; 1969, p. 201, *apud,* Marinică Cazacu, *Criza. Aspecte teoretice şi influenţa acesteia asupra stării de securitate,* Buletinul Universităţii Naţionale de Apărare "Carol I", Bucureşti, Nr. 2/2009, p. 321.

[4] Brecher I., *Studies in crisis behavior Special Issue The Ierusalim of International Relations;* 1978, p. 38, *apud,* Marinică Cazacu, *Criza. Aspecte teoretice şi influenţa acesteia asupra stării de securitate,* Buletinul Universităţii Naţionale de Apărare "Carol I", Bucureşti, Nr. 2/2009, p. 321.

[5] Longlin, B., *Risk and Crisis Communication*, Ed Longlin Multimedia Publishing Ltd, Ottawa, 1996, p. 10, *apud,* Marinică Cazacu, *Criza. Aspecte teoretice şi influenţa acesteia asupra stării de securitate,* Buletinul Universităţii Naţionale de Apărare „Carol I", Bucureşti, Nr. 2/2009, p. 321.

[6] Cătălin Zamfir , Vlăsceanu Lazăr, *Dicţionar de sociologie*, Editura Babel, 1998, p. 144.

[7] Beaufer-*Deterrence and Strategy*, Centre for Defence &International Security Studies, Lancaster, 2001, p. 54.

[8] Buchan, Alastair, *The End ofthe Postwar Era: A New Balance of World Power,* Editura Weidenfeld and Nicolson, 1974, p.87, *apud,* Marinică Cazacu, *Criza. Aspecte teoretice şi influenţa acesteia asupra stării de securitate,* Buletinul Universităţii Naţionale de Apărare „Carol I", Bucureşti, Nr.2/2009, pp. 321-322.

[9] *Apud*, Vasile Simileanu, *Conflictele asimetrice,* Editura Top Form, Bucureşti, 2011, p. 197.

[10] George C. Marshall European Center for Security, *Conflict Prevention and Management of Crisis and Conflict.*

[11] *** *Generic Crisis Handbook,* NATO, Bruxelles, august 1999, p. II-2.

Crisis, of whatever nature it may be, represents a moment of failure, the split within an organized system, being the bearer of risks for both national and international security.

Analyzing these definitions we can see that they have common general features, as follows: during the crisis, the evolution speed of the events is higher than the speed of reaction of the bodies involved in its management; crisis may surprise one or more parties implied in the conflict; each crisis has its own evolutionary scale; it is manifested by increasing the dissensions between the parties; any crisis requires external monitoring; institutions involved in crisis management need to plan short-term actions.

At the time of emergence and manifestation of the crisis phenomenon, the policy makers need to define a position either in favor of maintaining the system or of transforming it in order to resettle the balance and return to normality.

In most of the cases, the crisis gives some risks for the national or international security and requires immediate taking of appropriate decisions to resolve it. The crisis event is determined by the situation it generates and the area in which it occurs. For example, the economic crisis is different from the military one, although there are connections, states and moments of symmetry between the two types of crises.

The crisis analysis requires the consideration of all implied actors, included in the collaboration, work or antagonistic relations which are a challenge for the entities involved in the crisis management.

The decision process involves defining a position either in favor of transformation, or of sustaining a given system, in anticipation of a return to steady and normal. The decision must be taken by the actor who presents legitimacy, knows the people's attitude and is credible. The decision maker must eliminate the uncertainty, provide motivation, and maintain the spirit of mobilization and organization to the public, thus preparing it for reactions to formulate an adequate response to the crisis.

The emergency in deciding depends on the time available in evaluation and response. Although sometimes the crisis is predictable, it appears by surprise being caused by reasons that can hardly justify the violence in other conditions. [12]

If the crises and especially the international ones are not resolved in time, they can turn into armed conflicts that may affect national, regional or global security, so that their managing becomes a matter of interest not only for the countries directly involved, but also for the international community, which can involve by organizing political and diplomatic mediation missions, and when necessary by conducting crisis response operations under the aegis of the oriented security international organizations (UN, OSCE).

Conflicts can be found at all levels of human coexistence. In fact, not their presence would constitute a threat to peace, but the violences that propagate unjust systems and which, by taking over, push their interests and think that only they have „absolute truth." These systems can create patterns of thought and behaviour targeted for total conquest (one party's losses represent gains for the other one). In this respect, the strongest, sees the justice sitting only by his side.

In most studies, the conflicts are associated with fights, conflicts of interest, the use of violence or power.

An emotional attitude towards the object of the conflict is reflected in the domestic policy. In international politics it is different. The conflicts and their deepening change the attitudes and behavior of the implied parties, and in case of conflicts with a violent course, the opponent is seen as non-human, even as sub-human, his works are considered barbaric, even if they may not be different from their own.

Currently, conflicts have become one of the most important problems of the world politics, affecting both developed and underdeveloped countries. Starting with the Central America and ending with Southern Asia and Africa, conflicts between states are no longer sovereign crisis; they have become intrinsic lately, between population groups that are defined and distinguished by their ethnic, linguistic or religious identity.

According to Edward Azar, conflicts are defined as the consequences of incompatible goals of one or more parties, for which there is no effective mechanism of coordination, mediation and conciliation[13]. The parties which are usually referred to be states, but also communities within the states, as is the case of more and more conflicts

[12] Cf. Petrişor Mandu *„Managementul crizelor"*, Editura Lux Libris, Braşov, 2005, p. 43.

[13] Edward Azar, *The Management of Protracted Social Conflict: Theory and Cases*, Dartmouth Publishing Company, Hampshire, England, 1990.

in the contemporary world.

Specialists in the field who have dealt with studying the conflicts arising after the Cold War came to the conclusion that *most of them are no longer waged between classical actors of international relations, but have a character of internal conflict. It is estimated that for the first time in the history of the world it is impossible to see a major conflict between the world powers*[14].

Accordingly, the current conflicts do not carry between national armies any longer, but most often between government entities (ethnic, political, religious), which seek different interests within the same state[15].

At the same time it is also one of the reasons why victims of military-civilian balance has changed in recent years, the number of losses among the civilian population representing 90% of the total.

To eliminate conflicts of international life, the in-depth understanding of their causes is required. Like war, conflict has developed an approached from various perspectives and thus ended up having an equally diversified definition.

Some theorists assume that in modern society the conflict can be viewed as constructive and even beneficial to social self-regulation, and others regard it as something negative and with negative consequences for the evolution of modern society.[16]

In the theory of international relations, the conflict is perceived and analyzed according to the School of thought with which it is associated the one who investigates this social phenomenon.

For example, *supporters of the behaviour current* say that the nature and role of conflicts can be understood only if human behavior is studied when it acts to procure the necessary means to ensure survival and prestige in the community.[17]

According to the *supporters of the psychologist current*, they consider that the human being is embedded in the matrix instinct of aggression. To find an answer to the aggressive behaviour of the human being, they seek to combine the psychoanalysis research results with those of sociology.

At the middle of the ninth decade of the last century, a group of psychologists and sociologists in Spain tried to explain the aggressive behaviour by interdisciplinary research in urban areas with a case study conducted in the city of Seville.[18]

The research result shows that the appearance of conflict in human communities is determined by the type of relations between individuals on the one hand and between human groups on the other hand.[19] Hence the conflict is also defined in different ways.

R. J. Rummel, the renowned specialist in the theory of peace and war, says that *in philosophical sense, the conflict can be defined as a confrontation between a power with other power in trying to destroy everything that appears to manifest against it*.[20]

According to analysts Kenneth D. Bush and Robert J. Opp, they consider that modern society is by nature confrontational and that violent conflicts are actually those affecting both the structure and the way it functions.[21]

Also, the analysts at Heidelberg Institute for International Conflict Research, define conflicts as interest collisions or different positions in relation to national values (territory, secession, decolonization, autonomy, system of thinking / ideology, national power, the regional prevailing, international power, resources etc).[22]

Diminishing the role of principal actor on the international stage of the national state and the emergence of new non-classic players, intensification of process of reducing the territory of communities and political fragmentation after the collapse of multiethnic states, the emergence of new threats to human and collective security

[14] Taylor B. Seybolt, *Major armed conflicts,* în http://editors.sipri.se/pubs/yb00/ch1.html, consultat la data de 5 noiembrie 2014.

[15] *Ibidem.*

[16] James E. Dougherty, Robert L. Pfaltzgraff, *Contending Theories of International Relations,*. Harper & Row Publishers, New York, 1981, p. 187.

[17] Robert L. O'Connell, *Of Arms and Men, A History of War, Weapons, and Aggression.* Oxford University Press, New York, 1989, p. 30.

[18] John E. Mack, *The Enemy System*, in Vamik Volkan, et al eds., *The Psychodynamics of International Relationships:* Volume I: *Concepts and Theories.* Lexington, MA, Lexington Books, 1990, p. 58.

[19] *Ibidem*, p. 26.

[20] R. J. Rummel, *Understanding Conflict and War:* Vol. 2: *The Conflict Helix*, Chapter 26, în http://www.mega.nu:8080/ampp/rummel/tch.chap26.htm, consultat la 5 noiembrie 2014.

[21] Kenneth D. Bush şi Robert J. Opp, *Peace and conflict impact assessment, în http://www.idrc.ca/en/ev-9398-201-1-DO_TOPIC.html,* consultat la 6 noiembrie 2014.

[22] The Heidelberg Institute for International Conflict Research (HIIK) at the Department of Political Science at the University of Heidelberg, consultat la data 6 noiembrie 2014.

(transnational terrorism), led to the emergence of new types of conflicts.[23]

Jack's Levy noted that "*the interest for the conventional problems, as the balance of powers, international alliances, arms race, prevent attacks and confrontations between superpowers passed in the second plan, giving way to new problems related to ethno-nationalism, religious fundamentalism, environmental degradation, resources limiting, preventive diplomacy, humanitarian interventions and conflicts of small states*".[24]

According to the author, these new concerns of the contemporary world reflect an approach to a much smaller conflict, determined by a more complicated international system, rather than a radical change of the wars causes.

Conclusions

The intensification of globalization in recent decades seemed to bring hope of peace, prosperity, security also at a decent standard of living not only in the Western world.

Globalization and theory of democratic peace, transformed the international relations, removing the traditional policies of asserting power in the national agenda of most actors. The current security is the result of behaviour of state actors, non-state actors or even individuals that seem to cause the traditional theories of security.

The emergence of new crises and conflicts caused the instability to gain ground and to use of the military means more often. Today, the world offers a contradictory picture alongside prosperous areas from the economic point of view, characterized by stability and integration trends in international bodies.

The disappearance of some power centers controlling certain areas (see USSR), created a sense of freedom for the states freed from their influence, a situation that contributed to changes within its borders.

The period after the Cold War made that most of the conflicts to be deployed within its borders. This type of conflicts, called internal conflicts led to the change in approach to security by international actors who turned their attention to those states within which outbreaks of violence would generate harmful consequences for the countries concerned or for a region.

The experience of international organizations (UN, OSCE, NATO, EU) in crisis management, an important component of conflict prevention dimension, and the development of mechanisms of action, determined their selection as reference points to support the efforts of the international community in order to create a more peaceful world in which crises and conflicts should no longer find their place.

Starting from the globalization phenomenon, which causes expansion of the negative consequences of crises and conflicts, canceling thus the advantages of geographical distance that put the state actors safe from these, the international organizations will need to establish new formulas of cooperation in this field, ensuring effective crisis management activities and conflict prevention.

Comparing with the multitude of approaches in the field of concepts of crisis and conflict, now their analyses and studies do not include those proposed mechanisms to analyze such situations. The fact that crises situations are often triggered by factors that are based on the interests of the involved parties and that can hardly be deciphered make the work of specialists who are directly concerned with analyzing them while putting a great pressure on decision makers who are in the position to take decisions in extreme situations. For these, several hypotheses will be taken into account, because the accurate anticipation of how these actors can act during a crisis is very difficult.

Therefore, a few possible scenarios should be developed in order to reduce the risk of removal from that situation so that the anticipation of the intentions of the international involved actors can be diluted, making it difficult to identify the best solution for the crisis in question.

Finding the most effective way to resolve the situation becomes a problem for those who have a contribution to starting, dealing with and resolving the crisis while a difficult analysis mechanism may cancel this handicap, providing a more realistic picture of the crisis and position of the parties.

[23] Didier Bigo, *L'international sans territoire. Guerre, conflicts, transnational et terrritoire*, (partie 1), în http://www.conflits.org/document.php?id=234, consultat la data de 5 noiembrie 2014.

[24] Jack's. Levy, *Contending Theories of International Conflict*, in Chester A. Crocker and Fen Osler Hampson, with Pamela Aall, eds., Managing Global Chaos: Sources of and Responses to International Conflict (Washington, DC: United States Institute of Peace Press, 1996), p. 3.

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SECURITY CULTURE INDICATORS. KEY ISSUES TO MEASURING SECURITY CULTURE AND SOME METHODOLOGICAL CAUTIONS

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Abstract: *Although security studies have strong roots in sociology and other social sciences, they sometimes fail to take advantage of useful topics and methodologies that are mainstream knowledge for social scientists. Public security culture (and the efforts to measure it) is one of these subjects that could be better "exploited" by security studies scholars using classic sociological instruments.*

Keywords: *security culture; security studies; methodology; sociological survey; IR theory.*

Methodological issues in security studies and the theory of international relations. Security as a social subject

One of the most important issues affecting the theory of International Relations is that too much is written on this topic. The methodological debate has become very important in IR not only due to a sudden awareness of the problems it faces, but mostly under the quantitative pressure of the dedicated published body.

Fertile in nuances, approaches, crossovers, fragmentation and requalification, the group of disciplines from within the scope of International Relations does not succeed, most of the times, in finding the solution for the problem of finely attuning theory with the empirical field. And if someone did come up with a solution to this particular problem, it was either unnoticed or it fell into oblivion, captive in the dialectics of thesis/antithesis and less synthesis, which is altogether a characteristic of the fierce debates taking place in this field of scientific knowledge.

The domain is abundant in theoretical paradigms and is lacking in methodological paradigms that would accomplish the precise reason why methodology exists: to guide the research studies (and, given the highly applicative character of some of the domains circumscribed to IR, to guide the drafting of doctrines and policies).

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As it is plain, the theoretical and methodological debate over sociology has its problems, crises and transformations. It also has a multi-paradigmatic character. The advantage of sociology of (international) security would be the one of conceptual and methodological clarity, as much as the framework of sociology is able to provide. But, in any case, this sociological framework would be an older, more coherent and better equipped one than those of other border domains which have forgotten their theoretical and methodological forefathers.

Separated from their social theoretical, backgrounds entire theoretical landmarks and case collections fail to combine into a scientific object. And they just might deserve a better treatment if international security studies paid more attention to its social roots.

Lastly, a security issue – be it constructed or identified – is a social issue, and the international political system is a social system, namely one of the most important ones. That brings us to the subject of *security culture*, maybe the "most" sociological aspect of IR theory and security studies.

Measuring security culture. An operational model

Sometimes the connection between international security studies and sociology means more than recovering those methodological roots mentioned above. Sometimes this connection can generate strangely important study topics. We say strangely important regarding the fact that they are somehow neglected by mainstream scholars in IR and security studies.

A good example in this case would be the *security culture* concept.

The most famous book on security culture might be Peter J. Katzenstein's (editor), *The Culture of National Security*[1]. It is a collective book probably aimed at developing the subject that the title announces. Although a very comprehensive and analytical work, it fails to cover all the issues raised by the topic in question. Katzenstein's book is rather centered on the security culture of the international environment perspective, and it does not bring much for the researchers studying the public (or "popular") security culture. That's where the sociological perspective should step in.

Measuring security culture is a provocative undertaking. Approaches centered on security culture are already part of the mainstream in security studies theory. However, work on security culture lacks empirical content. As well as in the case of other security studies concepts, there is too much theoretical and speculative debate around *security culture* and not enough data.

Of course, security studies have a certain specific, including a methodological one. Although some research methods and techniques that are common for social scientists cannot be applied in vast areas of security studies, the methodological principles of social sciences remain valid even in this field.

Security culture is certainly a topic closer to sociology than others in the field. It is actually one of the rare study objects in security studies that can be approached through classic sociological methods, like the *sociological survey*.

However, the main challenge in measuring security culture is defining what kind of security culture we are interested in. As a concept, public security culture will include elements of public opinion and social cognition, public perception, attitudes etc. It is not the purpose of this article to explain approaches and models scholars use to tackle political or civic culture, but I will remind that, methodologically, security culture can be investigated similar to political or civic culture.

The key issue is transforming a theoretical concept of security culture into a methodological concept. A methodological concept means, from a sociologist's point of view, *one that can be measured*. This implies establishing relevant dimensions and indicators as objective signs of the security culture. The way to making the concept measurable is what social scientists call *operationalization* – at the end of this process we should have a list of social and security indicators that would allow us to approach the studied phenomenon with a certain validity and fidelity. After all, security culture, seen as what people understand, think or even fear in the field of domestic and international security, is a public opinion phenomenon and methodologies aimed at measuring it have to be fit for this type of studies.

After taking into consideration the main major possibilities to construct an operational model of security culture, it became clear that the most efficient way to study public security culture is through a standard public opinion survey, in which security culture indicators should evolve from operational dimensions regarding security topics rather than collective psychological dispositions.

For such an approach, the researcher will be guided by scientific literature on the subject, discussions with other experts and also, why not, by opinion polls (or other types of psychosociological research) which reveal vulnerabilities, fears, risks etc. perceived at the societal level.

Although it brings up a methodological risk, this is a more comfortable approach. The methodological risk we mentioned is obviously the one regarding the question of validity and fidelity. It is crucial to know that we are measuring what we are supposed to measure. And it is also important to rest assured that if we were to repeat the research process (in similar conditions) we should obtain similar or identical results. Of course the first step is writing the research instrument and let it face the reality, and not just once.

That sends us to our real challenge: setting the dimensions and selecting the indicators of the concept in question. The theoretical basis that would ease our efforts to create an adequate research tool is grounded in political culture studies and in sociological research on cultural characteristics of various social segments (of course, the questionnaire based sociological survey is the method we propose to be used in studying the subject). Taking into account the fact that we do not have significant security culture surveys in Romania, our first step in establishing how valid our measurement model can be is actually the pursuit for theoretical validity and fidelity. The phase in which we are is one of

[1] Katzenstein, Peter J., *The Culture of National Security: Norms and Identity in World Politics,* New York: Columbia University Press, 1996.

operationalization (as said above) of the security culture concept. The first „wave" of such an opinion research should not focus so much on scientific investigation results, but on the design and the content of the research tool. Such a project, in this phase, should not be interesting for the scientific community (or for the both of them: social scientists and IR/security scholars) in terms of results. It should be interesting in terms of setting a method of studying public security culture periodically (for example once a year, twice a year etc.) for a long time, that would allow us to compare data on public perception over security issues from „wave" to „wave".

Six dimensions of the operational model

Studying scientific literature and discussing with academic security studies and IR experts, guided by the approach mentioned above, led us to the following operational model aimed at measuring public security culture (dimensions and types of indicators).

Our proposal sets six operational dimensions for measuring public security culture:

A few cautions that a security culture researcher should have in mind and some conclusions regarding future works on the subject

Having a valid methodological approach and a strong and theoretically grounded list of indicators does not always ensure the quality of the sociological measurement. Here are a few issues that a good list of indicators or a good sociological survey regarding security culture cannot answer if not taken into consideration before data collection.

1. *Security* and *insecurity* are opposable, but the same thinking applies in the case of the opposability between security culture and the lack of security

		Types of indicators
1st Dimension	Security and defence institutions/organizations (domestic)	Security and defence institutions: notoriety indicators, trust and reliance indicators, perceived reaction capacity
2nd Dimension	International environment. Events, states and international organizations	International institutions trust and reliance indicators, opinion regarding international and security events, assessing globalization, perceived war threat, perceived international threats, other countries' attitudes regarding Romania, evaluation of international system
3rd Dimension	Socioeconomic aspects of security. Daily and non-military security	Public agenda, relation citizen-state, social and economic vulnerabilities
4th Dimension	Public fears. Perceived threats and collective vulnerabilities	Threats and fears. Evaluation of perceived threats and collective vulnerabilities
5th Dimension	Victim Indicators. Individual Threats and vulnerabilities	Perceived public safety, perceived victimization frequency, appeal to authorities in case of victimization
6th Dimension	Terrorism. Natural disasters. Nuclear security	Perceived possibility/probability that such events can occur (terrorist, natural disaster or nuclear security events)

Table no. 1

culture. It is important for the researcher to carefully design the research tool in order not to induce the idea that the opposite of security is insecurity. The same way, it is also important not to induce the idea that the opposite of security culture is the lack of security culture. Both observations can and should be drawn from the research. If they are not drawn from the research, they are irrelevant.

2. At least in first phase of our intended study, we can expect to have a typology with the following categories (linked, of course, with relevant socio-demographic variables, but also with explanations for which a social segment with certain sociological identifiable particularities is in one or some other situation).

People who own a certain degree of security culture.

People who rather posses a culture of insecurity.

People who don't possess a sufficient degree of any of the above mentioned characteristics (due to a lack of information, interest in this sense etc).

3. It is predictable, at least according to what several surveys indicate and also from our own previous studies, for the third category mentioned above to represent more likely a massive number. The second category, of the ones who own the "insecurity" culture, is however the most interesting. The insecurity culture, if identified among a quite significant number of "pessimists" it is a social construct in the sense of Berger and Luckmann[2], and it relies on *a fear* or *an interest* on the issue, but also on its "unproblematic" reproduction caused by social interactions, media, or educational stereotypes etc. The insecurity culture is not a form of apathy or anomic existence in relation to the system. It has a kind of informal transfer, as long as security culture benefits at least theoretically of a framework of social desirability and even of an intellectual infrastructure.

It remains to be seen in the context of periodically applied surveys on security culture if our questionnaire manages to discriminate between the three categories, to identify some correlations and to substantiate the typology.

4. Taking into account the three points mentioned above, measuring security culture may seem not such a simple sociological exercise, although it appeals to standard methodologies. Most difficulties are not induced by the method of research itself, but by the phenomenon that is our study object. A population unfamiliarized with (international) security topics might give "unusual" answers to a usual sociological investigation. That might lead the researcher to the wrong conclusion in assessing public security culture. A population who is repeatedly asked by sociologists on her fears, perceptions, reliance, support regarding security topics, institutions, etc., is a population who will develop better awareness of national and international security issues and probably a better security culture.

[2] Berger, Peter L.; Luckmann, Thomas. *The Social Construction of Reality*, New York: Anchor Books, 1966.

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INTERWEAVING BETWEEN THE CYBER AND PHYSICAL DOMAINS IN THE THREAT ANALYSIS FOR NUCLEAR SITES

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Abstract: *In this paper we overview the threat analysis process in the fields of physical and cyber security, as part of the requirements preparation for the implementation of security measures in nuclear sites. We highlight the essential characteristics of capability, motivation and intent, used as criteria in qualifying the threats. We analyse the interweaving between the two domains and the dynamic aspects of the threat.*

Keywords: *threats; physical security; cyber security; nuclear; design basis threat.*

Introduction

The concepts of physical and cyber security had, until a few years ago, separate paths. The idea of correlation between the two domains appeared only after the events that showed, on one hand, the credibility of the cybernetic risk and, on the other hand, an interdependence between the two domains, created by the infusion of digital technology in the area of industrial processes of physical nature.

In time, the concept of cyber-physical systems emerged, representing "integrations of computation and physical processes"[1]. These build on the flexibility of digital systems to create, measure, and control functions of physical systems in ways that did not seem possible through the analogue technology.

Along with the systems' evolution, the introduction of the cyber component created new vulnerabilities, exploitable by malevolent actors. Thus, a new range of threats appeared on the table of security specialists.

This paper does not approach the natural factors and the systems' intrinsic technological factors, as components of the general threat towards the system. In the nuclear field, these are included in the systems safety domain.

[1] Edward A. Lee, *Cyber Physical Systems: Design Challenges*, in 2008 11th IEEE International Symposium on Object and Component-Oriented Real-Time Distributed Computing (ISORC), 2008, http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4519604, accessed 30.05.2015, p. 3.

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Physical threats analysis

Physical security, also known in the nuclear field as physical protection, is the field that addresses the measures required for lowering, to an acceptable level, the risks of physical action, based on a malevolent intent, with potential unacceptable consequences, as uncontrolled radioactivity release in the environment.

To be able to dimension and design technical systems and organizational measures that will ensure the physical security, it is necessary to obtain information about the maximum credible attack which the nuclear site's defence system must withstand. In order to meet this requirement, the United States Nuclear Regulatory Commission (NRC) introduced, in 1979, the concept of Design Basis Threat (DBT).

The Design Basis Threat is a document that describes the types of attack the site must be protected against, with data on the capabilities of the attack force, its tools, the level of competence in various fields, as well as the intended purpose (sabotage, nuclear material theft).

The DBT model was adopted by other states, with the support of professionals at the IAEA (International Atomic Energy Agency in Vienna). Thus, both in the best practices courses organized by the IAEA and during the IPPAS (International Physical Protection Advisory Service) support missions, the experts recommend that the implementation of security measures be based on the DBT document.

The Design Basis Threat can be developed with applicability for one nuclear facility or for an

entire category of sites in a country. The analysis is done at the state level, since the structures involved both in drafting the document and in the response to a security event are at the national level; most of them part of the national defence system). This is stipulated in the Amendment to the Convention on the Physical Protection of Nuclear Material[2], among the fundamental principles.

In 2009, the IAEA published a guide for the development and maintenance of DBT, entitled "Development, Use and Maintenance of the Design Basis Threat"[3]. This guide specifies the state's role by suggesting the existence of, and the need to establish, a clear demarcation of responsibility for the response, depending on the characteristics of the threat:

For the development of the DBT, one of the essential steps is the threat assessment. According to the guidance, the assessment process includes gathering input data, their analysis and drafting the document.

The input data for the analysis are provided through a joint effort of all state structures with responsibilities in intelligence and incident response. The structures involved in this process can include: state's internal and external intelligence services, structures of the Ministry of Interior and Ministry of Defence, Ministry of Transport, Ministry of Environment, organizations specialized in emergency response, structures that ensure government communications and their security.

The intelligence process is based on all the types of information sources and aims to determine:

- security events that occurred on the state's territory and in other states with similar characteristics (e.g. attacks on nuclear targets, on critical infrastructure elements, theft of weapons or explosives, breaches of airport security, border crossing attempts by members of the extremist groups);
- proven or credible attack capabilities exhibited by various factors (e.g. based on information on procurement of technology or on recruitment of members with specific skills);
- elements that could facilitate an attack (e.g. the existence, in the vicinity of the protected sites, of explosives warehouses or chemical plants);

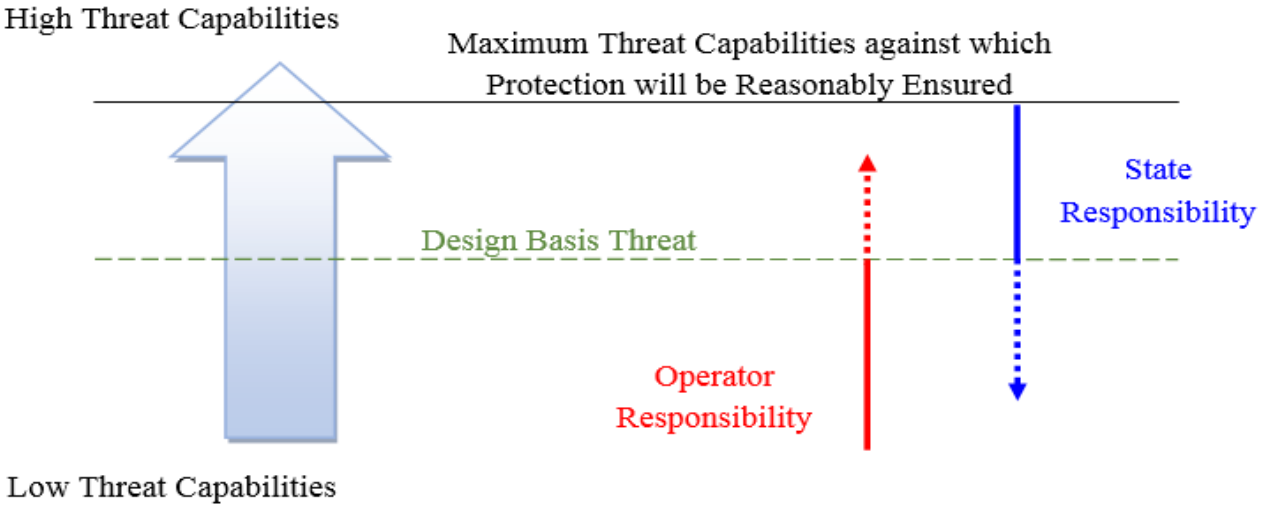

Figure no. 1 - Roles and responsibilities for protecting against threats

- insider threat elements.

After the data collection is completed, the next process is the analysis to "identify and document the credible motives, intentions and capabilities of the potential threats."[4] The guide specifies[5] a number of features of the physical threats that must be documented and taken into account for the assessment:

- motivation;
- willingness to put one's own life at risk;
- intentions;
- group size;
- available weapons;

[2] IAEA, *Amendment to the Convention on the Physical Protection of Nuclear Material*, IAEA, 2005, http://www.iaea.org/About/Policy/GC/GC49/Documents/gc49inf-6.pdf, accessed 30.05.2015.

[3] IAEA, *Development, Use and Maintenance of the Design Basis Threat*, 2009, http://www-pub.iaea.org/MTCD/publications/PDF/Pub1386_web.pdf, accessed 30.05.2015.

[4] IAEA, *Development, Use and Maintenance of the Design Basis Threat*, 2009, http://www-pub.iaea.org/MTCD/publications/PDF/Pub1386_web.pdf, accessed 30.05.2015, p. 15.

[5] *Ibidem*, p. 16.

- types and quantity of explosives;
- tools and equipment;
- means of transportation;
- technical skills;
- cyber skills;
- level of knowledge and information on the site;
- financial support;
- possible insider support;
- support from other organizations;
- attack tactics.

During the assessment, threats, for which there are no credible capabilities or for which either intention or motivation are missing, are discarded.

The list of remaining candidate threats is transformed, after the analysis, into a synthetic description of the maximum credible attack, which will be the basis in dimensioning technical systems, organizational measures and the response force.

In situations where the operator and the relevant national regulator agree on this, the operator can use a graded approach to apply security measures proportionally with the attractiveness and specific vulnerabilities of the target. For example, a low-level radioactive waste repository is much less attractive, because of the relatively low consequences of the theft of materials, compared with enriched nuclear fuel storage.

Since the information supporting the analysis is valid at the time of collection and threats evolve over time, best practices require a cyclical process of reassessment of DBT with a period of 1 year or whenever an event that brings major changes in threat perception (capabilities, motivations, intentions) occurs.

Considering that the sources of information used in drafting the DBT may be classified, and the fact that disclosure of the information, which formed the basis to the response structures design, in the public space can create prerequisites for preparing a successful attack, DBT documents are protected by classification.

Analysis of cyber threats

Cybersecurity focuses on measures needed to ensure an acceptable level of confidentiality, integrity and availability of protected system's elements. Most events analyzed in detail in literature and in the media consist of breaches of confidentiality and availability. The report, presented to the United States Senate Armed Services Committee in February 2015, stated that it is expected to "see more cyber operations that will change or manipulate electronic information in order to compromise its integrity"[6].

As a general approach, the concept of threat does not exist in the absence of concepts of vulnerability and potential consequence. Therefore, in many cases, threat analysis is limited, in practice, to the analysis of system vulnerabilities, addressing the premise that there is capability, intention and motivation for a possible attack.

In the nuclear field, we found no structured, industry-specific, approach regarding threat analysis.

The ISO 27000 family of standards, which is used by many operators for information security management processes, specify the responsibility of the organization to identify "the threats to resources"[7].

Given the importance of nuclear facilities in the light of the potential consequences of a security incident, operators receive support from regulators and governmental structures. In Romania, the Norm regarding the Protection of Nuclear Installations against Cyber Threats, issued in 2014, states that "cyber threats to be taken into account by the licensee shall be established by CNCAN in cooperation with the national authority for cyber security"[8], which is defined as the CyberInt National Centre.

Other potential sources of information for cyber threats analysis are the CERT structures, government or private. Analysing the Report on Cyber Security Alerts issued by CERT RO[9], we see that there is no structured information to characterize the threat, but rather a mix of vulnerabilities and incidents without specific data analysis to identify the origin or intention, motivation and capabilities. There are, though, private companies offering

[6] James R. Clapper, *Worldwide Threat Assessment of the US Intelligence Community*, 2015, http://www.dni.gov/files/documents/Unclassified_2015_ATA_SFR_-_SASC_FINAL.pdf, accessed 30.05.2015, p. 3.

[7] SR ISO/CEI 27001 - *Tehnologia informatiei, Tehnici de securitate, Sisteme de management al securitatii informatiei - Cerinte*, 2006, p. 12.

[8] CNCAN, *Norma privind protecția instalațiilor nucleare împotriva amenințărilor cibernetice*, p. 2.

[9] CERT RO, *RAPORT cu privire la alertele de securitate cibernetică procesate de CERT-RO în anul 2014*, 2015, http://www.cert-ro.eu/files/doc/915_20150325000331012990800_X.pdf, accessed 30.05.2015.

"threat intelligence"[10],[11] services.

We see thus that the analysis of cyber threats is addressed as a niche problem, the team participating in defining the threats being more limited than in the case of physical threats. It is possible that the delegation of this process to a specialized centre is a result of specialists shortages in other structures, this being one of the symptoms of the outstanding dynamics of the information technology.

The cyber security domain is characterized by a much wider dynamic of vulnerabilities compared to the physical security domain. First, information systems development cycle is very short. Updates to the operating systems and applications are released sometimes on a weekly basis, and new major versions of applications are launched every year. These things involve a potential of creating new vulnerabilities with every version, while patching previous vulnerabilities. Secondly, Moore's Law[12] suggests a doubling of the processing power of information in digital systems every two years. This means a great dynamic of the capabilities that characterize the threat.

In recent years, there have been more and more discussions on the Advanced Persistent Threat (APT). This refers to sophisticated offensive campaigns prepared by groups with high levels of resources and skills, with the potential involvement of state actors. Hutchins[13] proposes an analogy to characterize a cyber attack cycle, based on the mechanisms of combat "kill chain" with the following steps:

- reconnaissance;
- weaponization;
- delivery;
- exploitation;
- installation;
- command and control;
- actions on objectives.

APT type campaigns take place over several months, even years. The cited article emphasizes the importance of real-time attacks tracking and correlation of information, to enable early detection. The author shows that "defender's objective is less to positively attribute the identity of the intruders than to evaluate their capabilities, doctrine, objectives and limitations"[14].

Correlation and differences between the physical and cyber domains

Looking at the physical threat analysis approach, we note that there is a reduced dynamic of mechanisms employed by the potential attackers, changes in the Design Basis Threat being rather dictated by the motivations and intention areas. The evolution of the threat is dictated more by political and social issues.

In the area of cyber threats there is a significant technological dynamic. The definition of the threat has a predictable component, with a definition similar to the Design Basis Threat, updated annually. On the other hand, there is an unpredictable component, characterized by threats for which there are currently no available means of detection.

For both areas the interest remains in the basic elements of the threat: motivation, intention and capability.

If in the case of physical security the analysis is based on the classic intelligence component, using a real-time monitoring mechanism for detecting APT can provide information about threat elements between DBT reviews.

If we consider the context of the widespread use of digital technologies in physical protection systems, interdependencies between physical and cyber domains manifest by creating vulnerabilities that can be exploited through blended attacks. Such attacks could be targeted at computer systems used in the operation of the physical protection systems.

There are also recent elements of technology, at the boundary between the physical and cyber domains, suggesting the need for unification in threat analysis. Digital technologies, recently appeared on the market, as software defined radio systems, create attack capabilities considered unrealistic 10 years ago, allowing, for example, hacking or blocking the communication systems of response forces.

[10] *Dell SecureWorks Counter Threat Unit*, http://www.secureworks.com/cyber-threat-intelligence/, accessed 30.05.2015

[11] *iSightPartners ThreatScape*, http://www.isightpartners.com/products/threatscape/, accessed 30.05.2015.

[12] G E Moore, *Cramming more components onto integrated circuits* (Reprinted from Electronics, pp. 114-117, April 19, 1965), Proceedings Of The IEEE 86, 1 (1998).

[13] Eric M. Hutchins et al., *Intelligence-Driven Computer Network Defense Informed by Analysis of Adversary Campaigns and Intrusion Kill Chains*, 6th Annual International Conference on Information Warfare and Security July 2005 (2011), http://www.lockheedmartin.com/content/dam/lockheed/data/corporate/documents/LM-White-Paper-Intel-Driven-Defense.pdf, accessed 30.05.2015, pp. 4-5.

[14] G E Moore, *Cramming more components onto integrated circuits* (Reprinted from Electronics, pp. 114-117, April 19, 1965), Proceedings Of The IEEE 86, 1 (1998), p. 7.

Another disruptive technology is the 3D scanning and printing. In addition to the potential use for creating weapons, the technology can be used to create biometric models ("fingerprint phantoms"[15]).

Conclusions

As the interweaving between the physical and cyber domains creates interdependencies and correlations regarding threats and vulnerabilities, we consider that threat analysis should be conducted in a correlated manner.

Although the dynamic of the threat evolution is high, the long implementation cycle of the technical measures and the service life of implemented systems dictate the need, in the drafting of the Design Basis Threat, to use a conservative approach and a strategic analysis, for the capabilities prediction to cover a minimum of 5 years.

In this paper we did not consider the insider threat, given its special, unstructured nature. The literature mentions, in analyses, the insider threat as an additional factor and facilitator for an attack initiated from the outside[16]. The insider threat, coming from people with legitimate access to the systems, is a threat with potential major impact. Insider threat is at the same time, "difficult to measure"[17], with no modelling tools at the same level as the ones for the outside attacks. We will approach the insider threat analysis in future works.

[15] Sunpreet S. Arora et al., *3D Fingerprint Phantoms*, 2013, http://www.cse.msu.edu/rgroups/biometrics/Publications/Fingerprint/Aroraetal_MSUTechReportMSU-CSE-13-12.pdf, accessed 30.05.2015, p. 1.

[16] IAEA, *Development, Use and Maintenance of the Design Basis Threat*, 2009, http://www-pub.iaea.org/MTCD/publications/PDF/Pub1386_web.pdf, accessed 30.05.2015.

[17] R. Chinchani et al., *Towards a theory of insider threat assessment*, 2005 International Conference on Dependable Systems and Networks (DSN'05) (2005), p. 1.

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content/dam/lockheed/data/corporate/documents/LM-White-Paper-Intel-Driven-Defense.pdf, accessed 30.05.2015.

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BUILDING INTEGRITY IN DEFENCE*

Teodora FUIOR, PhD candidate*

Abstract: *Corruption in the defence sector raises significant challenges to the operational effectiveness of the armed forces, affects the troops morale and lowers the public confidence in the military; corruption can even become a security risk, jeopardizing the safety of soldiers and the delivery of security to the populace, threating democratic governance mechanisms, which are at the core of democratic systems. There are several features of defence sector that make it more prone to corruption than other areas of government activity: large size of the budget allocated to defence, the need to protect sensitive information through secrecy, the political nature of the defence budgeting process and its sensitivity to populist slogans. This article reviews the main areas of vulnerability for corruption in the defence establishment (focusing mainly on personnel policy, procurement, offsets and conversion programmes), and points out towards good practices applied in various countries in order to mitigate the risks and build defence integrity.*

Keywords: *defence budgeting; integrity; corruption; security policies.*

In most countries, people tend to trust their armed forces. Public surveys typically indicate that the military is one of the most respected institutions in society, enjoying more public confidence than the media, the private sector, political parties or parliament, and outranked only by religious organisations and non-governmental organisations[1]. However, various studies rate defence as one of the most corrupt areas of government activity[2]. Corruption in the defence sector may take many forms, including kickbacks and bribes, single source or non-competitive procurement contracts, manipulation of soldier payrolls, misuse of budgets, the use of military resources to generate off-budget profits and so on[3].

Building integrity and reducing corruption are two sides of the same coin. While corruption is the abuse of an entrusted office for private gains, integrity means meeting one's responsibilities honestly and completely. A process has integrity if it works as it is intended to and it fits into the larger system of which it is a part. An organisation has integrity if its activities are conducted with the proper accountability and competence, without any diversion of resources to dishonest, private ends. Both integrity and corruption are usually measured through audits and surveys. An emphasis on integrity, however,

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[1] See for example Gallup: 2015 "*Confidence in institutions"*, and 2011 "*National Governments Get Low Marks in the EU"* http://www.gallup.com/poll/1597/confidence-institutions.aspx, http://www.gallup.com/poll/151715/national-governments-low-marks.aspx (accessed 15 May 2015).

[2] Transparency International Global Bribe Payers Index 2006 rates the defence sector as one of the top three sectors for bribery and corruption, along with the oil sector and major infrastructure projects. The IMF report on corruption and military spending explains, "Procurement is an important channel through which corruption affects military expenditures." Moreover, according to the same report "bribes account for as much as 15% of the total spending on weapons acquisition." The U.S. Department of Commerce estimates that 50% of all bribes in global transactions are paid for defence contracts; numerous single source defence contracts have been awarded for operations in Iraq. See more information in Mark Pyman, Regina Wilson and Dominic Scott, *The Extent of Single Sourcing in Defence Procurement and its Relevance as a Corruption Risk: A first Look,* Defence and Peace Economics, 2009, p. 217, https://www.law.upenn.edu/live/files/4421-pyman-m-wilson-r-scott-dthe-extent-of-single (accessed 15 May 2015)

[3] Todor Tagarev, edt., *Building Integrity and Reducing Corruption in Defence. A compendium of Best Practices*, DCAF Geneva, 2010, p. 5.

is a more comprehensive, positive and pro-active approach. For this reason, most international and national programmes aimed to tackle the issues of corruption, refer to building integrity in defence.

Building and maintaining integrity in the defence establishment are important to the public in all countries for several reasons. First, defence sector corruption extorts a high price from other sectors of public life. It diverts funds from the national budget, preventing their investment in education, healthcare, innovation and development.

Second, it undermines national defence capacity, reducing the operational effectiveness of the military. This affects the safety of soldiers, training and combat conditions, and has a highly negative impact on troop morale. A corrupt defence sector can contribute massively to the criminalisation of the country's economy and politics, thus becoming a security threat in itself. The lack of integrity in the defence sector allows organised crime, terrorist groups, foreign intelligence agencies and obscure business interests to acquire national information, know-how, dangerous materials and weapons technology.

Thirdly, corruption in defence sector also undermines public confidence in the state. It leads to a loss of public trust in the military, ultimately undermining armed forces' readiness and prestige. Public respect for the military in various countries was damaged by repeated corruption scandals. In Bulgaria for example, 2009 saw investigations of top defence leaders, which led to several charges for abuse of power and corruption. Public pressure following these revelations led to dramatic cuts in the defence budget and a collapse in prestige and morale of the military[4].

The potential reward from an act of corruption depends upon several factors: the volume of resources under the control of the public official involved, the discretionary power at his/her disposal, the level of transparency and accountability to which the defence sector is exposed[5]. In the defence sector, these factors combine themselves in a manner that increases the potential reward of a corrupt act: substantial resources plus circumstances such as the need for "secrecy", "urgency", or "the national interest", can limit the decision making process to a small circle and drastically reduce its transparency and accountability.

In many countries the defence establishment is the biggest state employer, the armed forces being just the central piece in a system that comprises separate education, health, justice institutions, and a significant logistical and administrative infrastructure. Defence budgets are often among the largest components of public spending. Their share of the national budget ranges from 2-3% in Austria, Belgium, and Hungary, to 4.5% in France, Germany, and Greece, to 16-18% in Russia, India, and the U.S.A. Defence spending represents a significant percentage not only of a country's budget, but also of its GDP, ranging from 1% in Japan to 4.5% in the USA and Russia and even 9% in Saudi Arabia[6].

Secrecy in order to "protect national security interests" is the first and worst enemy of transparency in defence. It often prevents any possibility of meaningful external scrutiny. In defence procurement, it can limit the number of potential bidders (or even lead to single-source procurement), thus preventing competition, and paving the way for price and contract manipulation by suppliers.

Urgency in meeting operational and other defence requirements allows for the simplification of procedures or even for waiving of the rules – avoiding an open competitive bidding process, which is usually the rule for public procurement. The need to meet "urgent" necessities, especially when combined with references to secrecy, creates scope for non-transparent and arbitrary decisions, allowing suppliers to dramatically overcharge.

Populist slogans may also cover corrupt practices. The call to "buy national" defence products and services out of "concern for the people and their jobs", are often used to justify non-transparent, non-competitive contracts, which are conducive to paybacks in a variety of ways. This may lead to inferior products and services being procured at a higher cost. In addition, policies favouring domestic suppliers make it difficult to attract foreign direct

[4] However, the reforms undertaken in response to this situation rapidly transformed the Bulgarian defence and security sector, the country being now a lead nation in NATO's Building Integrity Trust Fund. See Todor Tagarev edt., *Building Integrity and Reducing Corruption in Defence. A compendium of Best Practices*, DCAF Geneva 2010, p. 9.

[5] Todor Tagarev, *op. cit*. p. 17.

[6] Data about military spending and their share in state budget or GDP is made publicly available every year in online publications of several organisations, such as UN *Report on Military Expenditures*, IISS *Military Balance*, SIPRI *Military Expenditure Database*. See for example http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS (accessed 17 May 2015).

investment and new technology, meaning fewer competitors take part in the process, and a more fertile ground for corruption is created.

Corruption in defence is usually associated with single-source or non-competitive procurement contracts. However, besides procurement, the defence establishment contains several distinct areas and vulnerabilities to corrupt practices, such as personnel management, operations and maintenance, offset arrangements, defence conversions programmes. The development of comprehensive and effective strategies and policies for building integrity in defence should address all of these areas, as we will try to review their specificity below.

A first hint towards these areas is given by the four main categories of defence spending: personnel management; operations and maintenance; procurement and construction; research and development. Each of these categories has its own set of corruption risks and challenges to anti-corruption efforts. Personnel costs represent by far the largest portion of defence spending, at last in Southeast European countries, where they count around 70-80% of the defence budget[7]. This very high percentage makes it a key area of integrity-building efforts.

Corruption in personnel management systems may take the form of extortion, theft, bribery, or the propagation of networks favouring corrupt practices. It can be occasioned by any personnel decision that does not follow a strict application of regulations or policy.

Examples may include[8]:

- conscription avoidance schemes (involving networks of corrupt officials, doctors, and instructors at recruitment centres)
- unmerited acceptance into entry-level officer training programmes
- unjustified promotions and assignments of posts
- preferential treatment in decisions on foreign postings (for example, for training assignments or participation in peacekeeping operations)
- unjustified advantages in the distribution of pay and benefits (housing, food, medical care, uniforms, time off)

Ensuring transparency in personnel management is complicated by several factors. Whereas recruitment and assignments are diffused across the entire system, reporting is hierarchical, via chain-of-command. The organisational divide between operational units and central staff, combined with the unwritten norms and traditions at the heart of military culture, create strong disincentives for whistleblowers. This makes collecting accurate information a challenging task. The first measure in fostering integrity in personnel management is to ensure a clear framework governing the legal status of the armed forces, conditions for recruitment, education and career development, respect for human rights and working conditions. The leading role in ensuring that this legal framework exists should be undertaken by parliament, who could also play a role in formally approving or endorsing senior appointments in the Armed Forces.

A more specific and effective measure is the creation of a specialized ombuds-institution who deals with complaints received from within the Armed Forces regarding abuses, discrimination and misadministration in personnel management. Such institutions complement the role played in all defence ministries by an Inspector General, and work closely with the parliamentary committees mandated to exercise oversight over the defence sector. The office of the Parliamentary Military Commissioner fulfils this role, with successful results, in countries like Norway[9], Germany[10] or Bosnia Herzegovina[11].

Operations & Maintenance absorb on average 20% of a country's defence spending. This covers items such as, the training of forces in peacetime, their preparation for operational deployment, the conduct of joint exercises and international peace-building missions. Decisions regarding national participation in peace operations tend to be made at short notice. Often, related procurement procedures are simplified, avoiding competitive processes. Cost considerations are frequently side-lined by inter-operability requirements and concerns about soldiers' safety. In many countries personnel are selected for deployment on the basis of unclear and non-transparent procedures, whereas remuneration

[7] See Military Spending by Resource Cost in *United Nations Report of Military Expenditures*, http://www.un-arm.org/MilEx/Home.aspx (accessed 17 May 2015).

[8] Todor Tagarev, *op. cit.*, pp. 43-56.

[9] http://www.ombudsmann.no/mil/english.asp (accessed 07 May 2015).

[10] http://www.bundestag.de/htdocs_e/bundestag/commissioner/ (accessed 07 May 2015).

[11] https://www.parlament.ba/sadrzaj/komisije/ostalo/vojni_povjerenik/default.aspx?id=3188&mid=1&langTag=en-US&pril=b (accessed 07 May 2015).

for international deployments is several times higher than a normal salary. This can lead to lobbying, bribery, and influence-trading within the defence establishment, as troops and officers attempt to secure postings abroad. In the case of peacekeeping deployments, some experts recommend deploying standing organisational units instead of contingents assembled for a specific mission, because such units would only need minimal additional assets and training to fulfil mission requirements.

Another area of vulnerability for corruption in defence comes from the fact that operations increasingly rely on the private sector. There are three main ways of private sector involvement in defence operations. Outsourcing happens when organisational activities are contracted out to vendors or suppliers who specialise in these activities. Privatisation refers to those instances when current government property, equipment, and facilities are sold to the private sector. Public-private partnerships occur when the private sector invests in defence projects or operations, sharing resources, expertise, risks and rewards in a joint venture with a state partner.

These arrangements offer considerable opportunities to improve the efficiency of defence forces. However, in the absence of strong ethical leadership, institutions and oversight, they can open avenues for illegal acts such as bribery. This can occur alongside legal lobbying activities by private companies meant to encourage political and bureaucratic processes to choose sourcing options that favour private interests to the detriment of the defence establishment.

The use of contractors—in particular, the rise of private military companies—in operational deployment, peacekeeping, and stabilisation campaigns, is also a prime concern in this area. There is frequently a lack of transparency in bidding, creating scope for favouritism, misappropriation, nepotism, bribery and corruption.

So far, there is no international system for evaluating, registering, or licensing private contractors and defining or upholding professional performance standards. However, small steps have been taken for the development of such a system. The *Montreux Document on Private Military and Security Companies*[12] of 2008 breaks new ground in defining how international law applies to the activities of private military and security companies. The *International Code of Conduct for Private Security Service Providers*[13] (ICoC), is a multi-stakeholder initiative that aims to both clarify international standards for the private security industry operating in complex environments, as well as to improve oversight and accountability of these companies. Governments are encouraged to outsource defence services only to private security companies that have endorsed this oversight mechanism, allowing for external, independent inspections on how they conduct their affairs and comply with the rule of law.

Defence procurement has been identifies as a main issues of concern in the discussion about defence corruption, for reasons dealing with transparency, democratic oversight, value for money and high corruption risks[14]. Defence procurement refers to two distinct processes: acquiring new defence capabilities through introduction of more advanced weapon systems, and maintaining existing capabilities through the provision of spare parts, fuel, logistic services, etc[15].

Defence procurement is a process highly prone to corruption, for several reasons. Given the large size of the defence establishment, even the procurement of simple products (such as food, fuel, uniforms) involves large amounts of money. When it comes to the procurement of highly advanced and specialised technologies the number of potential providers tends to be limited. In addition, national security considerations can limit alternative procurement options, giving inordinate power to suppliers to influence negotiations and contracts. It is also difficult to directly link defence needs to procurement as statistics about costs can be hard to obtain, incomplete or non-existent.

Corruption in defence procurement originates either with a bidder (offering an illegal payment to influence the outcome, i.e. bribery) or a public official (demanding a payment to influence the outcome, i.e. extortion). In order to reduce corruption in defence procurement, initiatives to

[12] https://www.eda.admin.ch/eda/en/fdfa/foreign-policy/international-law/international-humanitarian-law/private-military-security-companies/montreux-document.html (accessed 07 May 2015).

[13] http://www.icoca.ch/ (accessed 07 May 2015).

[14] Mark Pyman, Regina Wilson and Dominic Scott, *The Extent of Single Sourcing in Defence Procurement and its Relevance as a Corruption Risk: A first Look,* Defence and Peace Economics, 2009, p. 215. https://www.law.upenn.edu/live/files/4421-pyman-m-wilson-r-scott-dthe-extent-of-single (accessed 15 May 2015).

[15] Todor Tagarev, *op. cit.*, p. 72.

enhance the integrity of the process have to address three main dimensions of the process: the conduct of participating organisations, the behaviour of individuals involved and the decision-making process.

Regarding the integrity of participating organisations, it is important to aim at building integrity on both sides of a procurement contract – both the demand and supply dimensions. On the demand-side, within the Ministry of Defence and military establishment, clear delineation of competencies is essential – especially regarding decision-making authority and oversight responsibilities. In the 1990s, Transparency International developed the Integrity Pact as a tool governments can use to combat corruption at the tendering and contract stage of procurement. The Integrity Pact is a contract that binds bidders and buyers to non-bribery pledges for a specific procurement. Furthermore, it restricts government officials and close relatives from obtaining work at bidding firms for a set period after the bid has been submitted; they also require the disclosure of details of agents and intermediaries. To ensure transparency of such pacts an independent monitor or a monitoring team is appointed, which is then provided with full access to all meetings and documents. 15 countries around the world have applied such pacts to major defence procurement contracts, including Croatia, India, Poland, and the United Kingdom[16].

Another good example comes from the USA, where the major defence companies formed the Defence Industry Initiative, wherein each signatory agrees to complete a detailed annual questionnaire relating to their ethics programs and practices. The results of this questionnaire are then compiled and published in an annual DII Public Accountability Report. All companies that are part of this initiative have codes of conduct, ethics departments, whistle-blower hotlines, and ethics training programmes for staff[17].

On the supply-side, the defence industry has faced in recent years numerous corruption scandals which have weakened public confidence in defence contractors. A company may pay to be included in the list of qualified bidders or to restrict the number of competitors. Those who make such payoffs expect not only to win the contract, but also to obtain future subsidies, monopoly benefits, and loose regulations in their favour. Often, suppliers are expected to take the lead in rooting out opportunities for corruption that they can fall prey to.

The individual integrity of the persons involved in a procurement contract is even more difficult to tackle. No measures against procurement-related corruption will be effective if individuals involved in the process lack integrity. The theory of rational behaviour in economic crime makes it possible to examine corruption as the result of rational choices made by individuals, after having evaluated potential personal rewards obtained from breaking the law, against the likelihood of apprehension, conviction and the severity of punishment they might get. According to this approach, there are two factors deterring corruption: the "moral burden", determined by culture and individual ethics; and the "expected punishment", determined by legislation[18]. To reduce the risk of corruption at the level of individuals, countries use both "hard" and "soft" measures[19].

Hard measures can be used to criminalise conflicts of interest and acts of bribery. These can cover the period of the actual procurement, but also the past and future. For example, measures can be taken to restrict conflicts of interest resulting from the prior involvement of government officials or military officers with defence contractors, or potential involvement with the private sector after retirement from government or military service. Conflict of interest occurs when an official has personal or private interests that result in him/her putting these before his/her statutory duties. Some countries define a conflict of interest as present, but also future advantages, an official might gain from a current procurement contract, for example, when the official starts working for, or receives other benefits from, a defence supplier for a determined period after having stopped working for the government.

Soft measures usually take the form of Codes of Conduct applied by both government institutions and defence suppliers on their staff. Whistle-blower protection lies somewhere between the hard and soft approached described above. It is designed to encourage people who know about corrupt

[16] *Ibidem*, pp. 84-85.
[17] *Ibidem*, p. 83.
[18] Gary Becker, *Crime and Punishment: An Economic Approach,* The Journal of Political Economy 76: 169-217.
[19] Todor Tagarev, *op. cit.,* p. 82.

behaviour to report it to the authorities.

Norway has adopted specific legislation on the protection of whistle-blowers. This gives all employees in the private and public sector, the right to bring to the attention of authorities suspected misconduct in their organisation, on the condition that the employee follows an "appropriate procedure". The law prohibits "retaliation" - understood as any unfavourable treatment that is a direct consequence of, and a reaction to, the notification submitted by the employee. Any bad faith in the whistle-blower's motives will not hinder lawful reporting as long as the disclosure is in the public interest. An employee who "signals" that he/she will submit a notification (for example by copying documents or threatening action unless the unlawful practice is changed) is also protected against retaliation. If there is any kind of retaliation against the "whistle-blower" following his/her disclosure, the compensation awarded can be unlimited.

The law in Romania[20] is one of the rare European regulations on the matter to propose a definition of the term "whistle-blower". "A 'whistle-blower' is an individual who reveals violation of laws in public institutions made by persons with public powers or executives from these institutions". This definition must be read in conjunction with that of "whistle-blowing in the public interest", which is defined as reporting, in good faith, any deed infringing upon the law, the professional ethical standards or the principles of good administration, efficiency, efficacy, economy and transparency.

Regulations in the USA make ethics programmes, training, reporting, and whistle-blower protection mandatory for all defence contractors. Protection covers all contractor employees who disclose information to government officials with regard to waste or mismanagement, danger to public health or safety, or legal violations related to the defence contract. An employee may not be discharged, downgraded, or otherwise discriminated against as a reprisal for disclosing information concerning contract-related violations to the government. All contractors are obliged to inform their employees in writing of these federal whistle-blower rights and protections. Similar reporting requirements also apply to government employees; any case of reporting may be done by mail, online, or phone and can be anonymous and non-traceable if the reporting person wishes so.

In Poland, all contractors are obliged to inform their employees in writing of these federal whistle-blower rights and protections. Similar reporting requirements also apply to government employees; any case of reporting may be done by mail, online, or phone and can be anonymous and non-traceable if the reporting person wishes so[21].

In order to foster integrity within the integrity of the decision-making process, regulations have to provide for a clear causal link between defence policy and procurement, taking in consideration budgetary fiscal restraints. Acquisition requirements must be carefully prioritised in order to assemble an overall defence programme that is as comprehensive and balanced as possible. Close examination of competing requirements and value for money analysis are essential.

Another major corruption risk, even in the most developed countries, is represented by offset arrangement[22]. Offsets are designed to compensate local stakeholders for the purchase of equipment or services from a foreign contractor. They are frequently an integral part of international defence contracts, and in some countries legislation requires offset arrangements for contracts above a certain value. Offset commitments can encompass a wide variety of activities such as co-production, production under license, marketing and exporting assistance, subcontracting, training, technology transfer, financing or foreign investment. Offsets support the development of national industry and can help bring a country's balance of trade into equilibrium. They often offer government an opportunity to ease opposition, on the part of national producers and the general public, to major defence spending. The choice of what is needed, or even whether something is needed, can be influenced by "incentives" offered under the offset clauses.

Defence purchases are rarely a simple economic transaction. They often have an international political dimension whereby the purchasing nation is hoping to deepen political relations with the supplying nation. They are also large enough to have an impact on the domestic political agenda – the offer of defence suppliers to provide investment,

[20] Law 682/2012m http://legislatie.resurse-pentru-democratie.org/legea/682-2002.php (accessed 15 May 2015).

[21] Todor Tagarev, *op.cit*., p. 84.

[22] *Ibidem*, p. 86.

job creation, or special goods and services within a certain country, region, or city can influence local politics in favour of the purchase. These can make otherwise unattractive products appear politically attractive.

Governments often also place 'multipliers' on offsets as a measure to incentivise investment in priority fields. For example, if a multiplier value is kept at 3, it means a foreign company can claim credits up to three times of its actual offset investment. So, if the Ministry of Defence urgently requires a specific technology for producing tank armour, a multiplier of 4 could be placed on that technology. That would give a vendor who provides technology worth $20 million an offset credit of $80 million. It has been reported, though, that such clauses can be used by vendors to minimise their actual offset investments in the country. For example, a major defence contractor from the U.S., despite having $10 billion of nominal obligations in one of its markets in the Persian Gulf, only needed $1 billion to fulfil its obligations, through the use of multipliers. Another example comes from South Africa, where a Swedish defence supplier received more than $200m in offset credits just for spending $3m on upgrading swimming pools in Port Elizabeth and marketing the town to Swedish tourists. In order to prevent misuse of multipliers to reduce or misdirect offset obligations, many countries place limits or conditions on multiplier values. In India, the maximum multiplier of 3 is allowed only when a foreign company provides a listed technology without any restriction on its volume of production and sales, including exports[23].

The use of offsets has grown substantially in the recent past, as suppliers have understood the power of such clauses in influencing procurement deals. The average value of offset arrangements represented 49% of procurement contract value in 1995, but grew to 103% in 2005. For example, Lockheed Martin, one of the largest defence contractors, has US$ 19 billion of offset obligations across 12 countries.

Offset arrangements are often commitments that are not finalised until after the award of the contract. They can then take years to be fully implemented. Owing to this time delay, and the concomitant lessening of political and media scrutiny, there is scope for making opaque deals and returning favours to those that helped win the contract. Offset clauses are not just limited to investment in the country's defence sector. Saudi Arabia's defence contracts with the UK included offsets obliging the British companies to develop a sugar processing complex, a pharmaceutical plant, and commercial computer training facilities within the country. Malaysia's offsets contracts have seen the development of its higher education sector through investments in universities, while Kuwait has used offsets to develop small and medium enterprises in the civilian sector.

Defence conversion programmes represent another area vulnerable to corruption, especially in East European countries where often the military is a large owner of property, infrastructure, industry facilities and surplus equipment. Several components of defence conversion programmes can raise integrity challenges: for example, the conversion of military bases and facilities, the disposal and destruction of surplus military equipment weapons and stockpiles, and the restructuring of military industries. Private commercial interests can find these military assets highly attractive. For example, private companies can attempt to influence the decision-making process so that valuable assets are labelled to be "unnecessary" for future defence needs, or valued below market price before being sold off or exchanged. Barter and exchange of such defence assets present even a higher corruption risk than procurement.

On the other hand, defence ministries are also often subjected to intense public pressure and (legal and illegal) lobbying by states, cities, localities, and special business interests to prevent base closings or property transfers that might entail the loss of revenues and jobs – even when those assets or activities are no longer necessary for national security and represent a drain on the defence budget.

Outsourcing of specific services, such as ensuring the security of storage areas, destruction of surplus weapon systems, equipment, and ammunition, can lead to contract and tender manipulation or negotiations with a single company. Both sides may have an interest to prolong the contract as long as possible, thus delaying the destruction of surpluses. As with other defence contracts, the risk of corruption in defence conversion decreases with the implementation of open tenders and trans-

[23] *Ibidem*, p. 91.

parent, competitive procedures with clearly formulated requirements.

In some countries, the defence establishment is an economic actor, using its resources (personnel and assets) in profit-generating activities, to generate revenue for the military, independently of the state budget. The risks involved in such cases are two-fold. Firstly, the professionalism of the armed forces can be compromised if its resources and personnel are diverted towards the private sector. In the process, the military can become more interested in generating profits than providing security to the state and its citizens. Secondly, this can reduce the accountability of the armed forces. Having established an independent means of financing itself, the military can detach itself from civilian control, which in turn can generate risks for its overall role in society.

Several regional initiatives, especially relevant for countries in Eastern Europe, reflect the importance grated to building integrity in defence, as essential component of security sector reform and efforts to achieve good governance. At the European level, there are initiatives designed to promote open competitive bidding through the use of the European Bulletin Board (EBB) on Defence Contracts Opportunities maintained by the European Defence Agency[24]. This platform not only provides opportunities for inter-governmental cooperation and transparent defence procurement, but also has a series of detailed codes, rules, and procedures aimed at establishing norms and best practices among member-states.

The NATO Building Integrity Initiative[25] was created out of discussions between NATO and Transparency International to support the wider international effort at reducing corruption risks. The Initiative is open to all NATO allies and partners in the Euro-Atlantic area, the Mediterranean, and the Gulf region, as well as other countries across the globe, including Afghanistan. Participation in is on a voluntary basis, and the implementation is a responsibility of nations – national ownership and commitment being a pre-requisite. Activities aim to develop practical knowledge to help nations meet their international treaty obligations to the UN, OECD, and others. These activities include: integrity self-assessment tools, tailored training programmes, workshops, roundtables, publishing guidelines and best practices, research and analysis. The involvement of Members of Parliament, parliamentary staffers and civil society is welcomed.

The South-eastern Europe Defence Ministers (SEDM) Process was prepared by NATO with Bulgaria as the lead nation, following extensive and successful reform efforts in Bulgaria. States participating in the SEDM's tailored Building Integrity Programme include Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia, Montenegro, Romania, Serbia and Slovenia. The process is open to other SEDM nations as well as observers. As of 2014, Bosnia-Herzegovina, Bulgaria, Croatia, and Ukraine have already completed the Building Integrity Self-Assessment and Peer Review.

It is a world recognised fact that corruption undermines the development of nations. In spite of a wide array of corruption vulnerabilities in the defence sector, a careful and comprehensive analysis of these vulnerabilities enables governments to put in place effective strategies to build the integrity of their defence establishments. Such efforts have high payoffs, translated in better effectiveness of armed forces and increased levels of legitimacy and public trust in the military.

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PERFORMANCE EVALUATION ELEMENTS WITHIN DEFENSE RESOURCES MANAGEMENT

Colonel Florin Eduard GROSARU, PhD

Abstract: *Defense resource management is a major challenge for the defense system of any state. That is true for developing states like Romania given the transition status of their economies, as well as their sensitive geopolitical environment. The large scale attempt to decrease the financial resources made available to the defense sector despite the latter real needs must be aligned with the necessity to focus on the efficiency and effectiveness of this field. Therefore, one possible solution could be to employ performance management in the process of allocating and managing the defense resources. Consequently, this paper focuses on analyzing the elements incurred by performance evaluation as part of defense resources management. In this respect, it starts from analyzing the factors that influence the performance of defense resources management, continues by identifying the requirements of the performance management system as related to the types of budgets, and concludes by identifying the possibilities to optimize resource allocation by elaborating and applying specific performance indicators.*

Keywords: *performance; optimization; defense resources management.*

Introduction

The mission of an organization drives all its future efforts to achieve underlying goals and objectives. Moreover, the standards derived from the aforementioned objectives generate answers to questions like: how and when an objective is accomplished.

All of the above is a salient feature for defense resources management. Defense resources allocation decisions require the best estimate of future costs and outputs. Practice has proven that even the best estimates are prone to triggering an imbalance between high cost estimates for not so high output estimates. Therefore, annual budgets need adjustments that are to be generated and efficiently controlled by applying performance management principles in the field of resource allocation. Thus, to include performance management into defense resources management is to boost the best results at individual, group, structure level, as well as within the overall establishment. Consequently, performance management needs to be approached in a systemic manner and must be anchored in the interplay of all its underpinning processes: planning, organizing, coordinating, evaluation and measurement that are to be employed in the management of defense resources and, in particular, in accomplishing the goals of the military establishment. In this respect, the focus is on outputs and on the efficiency and effectiveness of processes.

For such a process to work, it is mandatory to take a number of steps: analyzing the factors that influence defense resources management performance, establishing the requirements that underpin the system of performance management in tight relationship with the categories of budgets, identifying the possibilities to optimize resource allocation by elaborating and applying specific performance indicators.

Factors that influence defense resources management performance

Generally speaking, the level of performance management is the direct result of its employees' activities. However, upon a careful analysis, both the overall organization and its employees are tightly interrelated, not to mention their unavoidable and mandatory interaction with the macro environment, all of which impacts overall organization performance. As a result, these concerns become one of the responsibilities of all

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management levels. The discussion is valid for the military establishment as well, since its scope is supported by defense resources management.

The plethora of factors that influences defense resource allocation performance can be grouped in two categories: external factors – political, economic, social, technological, environmental, and internal ones.

As far as **external factors** are concerned, these cannot be influenced by the political and military management decision makers. What the latter can do in this respect is to identify them, become familiar with them and quantify them as precisely as possible in order to formulate the right answers and adapt military organization activities to their requirements by creating and maintaining high performance standards in defense resources management. Some of these factors are:

- *The challenges of the regional and international security environment* decisively and unavoidably impact the vision and essence of the armed forces;

- *The allegiance of a state to its allied and member status in international political and military alliances* generates new missions for the armed forces that translate into involvement in military operations outside national borders;

- *Globalization* as a contemporary phenomenon that has shifted the focus from the domestic environment to the international one in many areas, the security one included;

- *Organization changes within contemporary armed forces* is a triggering factor for the implementation of defense resources management within performance standards;

- *Contemporary revolution in military affairs* especially in the field of state of the art information and communications technologies, as well as in the field of new weaponry strongly impacts military doctrine, the content and nature of national armed forces' missions, of multinational coalitions and political and military alliances[1];

- *The active role played by the international* community in controlling and managing challenges, risks, dangers and threats to security hugely impacts defense resources management and, inherently, its performance;

- *Change of political* regime at national level influences the process of defense resources management in the Romanian armed forces. The provisions in the Romanian Constitution, as well as those to be found in the legal framework related to national and collective defense and security are evidence in this respect;

- *Democracy* development allows for a rigorous definition of the competences of the military institution as part of society;

- *The political neutrality of the military institution* correlated with *the creation and development of market economy* in our country have represented the critical areas leading to the adoption and operationalization of defense resources management, as well as of the latter's ongoing adaptation to the dynamics of the political and economic requirements;

- *The high complexity of armed forces transformation.* This is to permanently address multiple challenges generated by the need to adapt military and civilian personnel' way of thinking, to change their mentality and to improve their capacity to adapt to changes, as well as by the identification and assurance of the necessary human, financial, information and material resources;

- *The challenges of the domestic security environment* determine the content and nature of missions assumed by the armed forces within national borders. The internal security environment is permanently influenced by social, economic, political, military, information vulnerabilities and, hence, it becomes the target of diverse risks and threats. In this context, one mandatory condition is to optimize and consolidate the management process of defense resources in the Romanian armed forces;

- *The knowledge, skills and attitudes* of the political decision makers in the defense sector and, especially in the defense resources management area, actively involved and committed to national interests and with no political, economic or group affiliations generate clear goals for the defense sector and hence consolidate the defense resource allocation process by making it coherent and consistent. This reality ensures efficiency and effectiveness of defense resources management in its relation with security interests and performance standards;

- General *technology impetus* and information and communications technology swift development have a major impact on armed forces doctrine, skills and knowledge required to operationalize and effectively use it;

- *Resources* that can be made available to the military sector overwhelmingly influence defense resources management as a result of their availability, quality, profitability and costs;

- *The features of defense resources market*

[1] I. Bălăceanu ş.a., *Câmpul de luptă modern sub impactul tehnologiilor moderne*, Bucureşti, Editura ARS DOCENDI, 2003, pp. 9, 34-35, 68.

influences defense resources management performance since this is mostly a niche one with a relatively decreased number of competitors, and significantly high costs in terms of human and material resources.

The ***internal factors*** are tightly related to organizational climate and therefore can be influenced by the management of the military organization and its employees.

Some of these are:

- *Human resources management* is the core strategic internal factor that all the others depend on and concerns the strategies and policies on recruitment, professional development and performance management. Its main goals are built around securing a minimum level of the human resource in the defense area, as well as the optimal layered and network structuring of the military organization;
- *The motivation of employees' behaviors* to the end of best using their skills and potential along with the efforts aimed at reaching the performance goals of defense resources management;
- *Financial and logistic resources* influence the performance of defense resources management as a result of their availability, quality, timeliness, etc.;
- *The organization* structure influences employees' behavior and activities as a result of its specific mechanisms: management systems; job descriptions; hierarchy; work plans and procedures; specific regulations. Moreover, human resource strategies and policies depend on this structure;
- *Management philosophy and styles* influence human resource policies and practices and impact employees' manner of achieving goals and their morale;
- *Organization culture* is directly related to management philosophy in a loop manner. Therefore, employees' performance highly depends on the relationship between these two;
- *Organizational climate* regulates employees' behavior and motivation through: responsibilities, rewards/sanctions, risks, camaraderie, standards, support, internal conflicts, identity;
- *Achieved results* are the basis for making the necessary changes and adjustments before the processes of defense resources management are resumed with a view to improving its performance. If results are measured, it is difficult to tell success apart from failure, and if success is not visible, it cannot be rewarded; inherently, if failure cannot be detected it cannot be corrected.[2]

[2] David, Osborne, Ted, Gaebler, *Reinventing Government*, Addison-Wesley Publ. Co., Boston, 1992, p. 147.

Results provide information on: processes *effectiveness* as a result of comparing them with the objectives/ indicators initially established; *efficiency* in employing resources to obtain these results; *development*, that is the extent to which the number of resources has increased and the extent to which the whole military organization has increased its capacity to timely counter various challenges, most of which are hard to foresee; *employees' satisfaction* for their work and its impact on their overall professional activity and results.

Thus, defense resources management performance and its long term planning mostly depend on the manner in which the political and military decision makers identify, take advantage and use external factors in order to increase it, as well as on their employment of the available internal factors to support performance strategy.

Establishing performance management system requirements in tight relationship with the categories of budgets

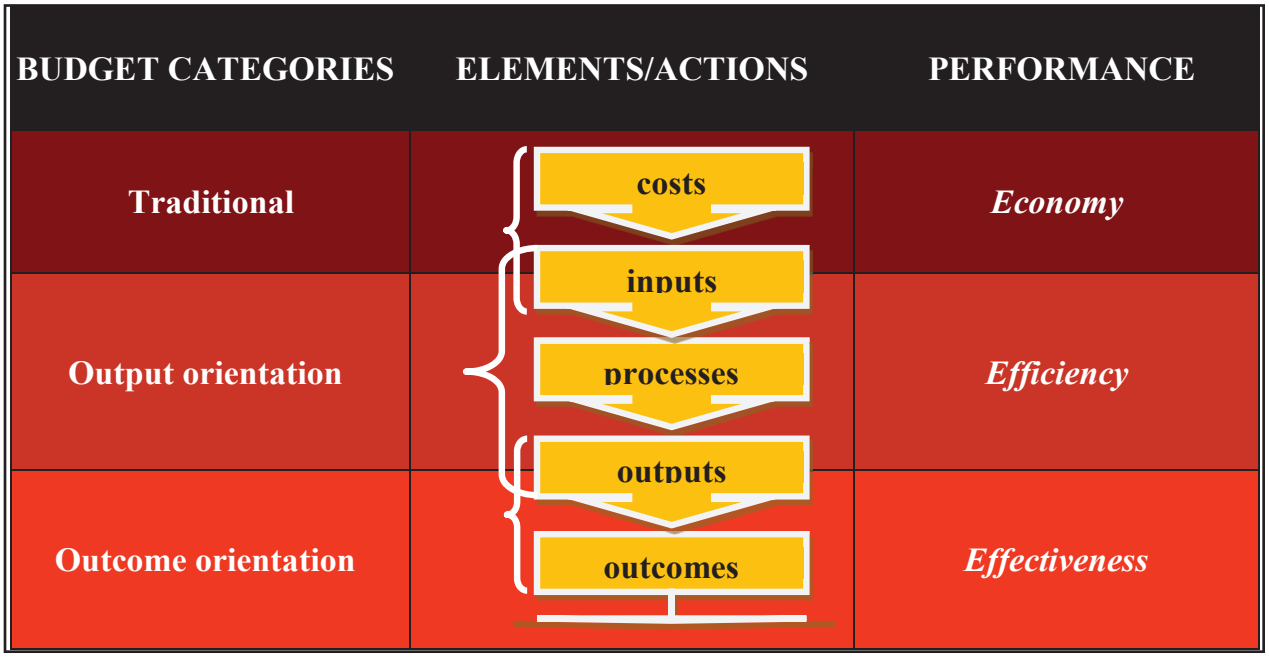
The process of performance management in defense resources management is heavily influenced by the external environment of the defense sector given its necessity to continuously adapt to the latter, the internal equilibrium as a result of a balanced allocation of resources, as well as by financial profitability. Therefore, defense resources management focuses on performance by using the overall means it has available in order to meet the political requirements in the national security area. As a result, to analyze resource allocation performance is to have a performance evaluation system for the overall defense resources management process. Consequently, the performance indicators need to be tightly related to the goals established by the political and military decision makers.

All of the above leads to a number of goals driving and ensuring performance in the area of defense resources management:

- Improving the activities that are characteristic for resource allocation in order to obtain good results at all system levels;
- Developing and improving the human resource involved in the process of defense resources management on an ongoing basis;
- Focusing defense resources allocation in order to meet the demands of the political and military decision makers, as well as of the nation;
- Ensuring and maintaining ongoing communication both among political and military

decision makers and vertically among all layers involved in the defense resources management in order to establish timely communication and understanding of goals, values, procedures and means to accomplish these.

To apply and operate a performance management process as part of defense resources management is to actually operate performance measurement systems that translate all activities into costs by establishing and employing specific standards, and comparing expenditures with the performance



level achieved as measured against the targets initially established. The need to identify, establish and use a unique system of costs in resource allocation that would ensure the correlation and transition among the stages of the programming, budgeting and evaluation system and that would also underpin all cost calculation efforts in the defense area is a challenge in this respect. This need requires the correlation of all performance related data and information with the resource allocation processes and budget execution. In the absence of such a relationship, performance is mere statistics with no direct relation to the daily management of military organization activities.

Nowadays, there is a focus on establishing and developing the relationship between performance and the types of budgets adopted in the defense area. The evaluation of this correlation must be done in terms of budget orientation towards inputs, outputs and outcomes. Consequently, budgeting can be done based on:

- Inputs, that is traditional budgets, are neither based on priorities, plans or medium or long term activities, nor on the costs of specific activities. In this case, performance evaluation is done based on the conformity between budget allocation and already existing standards, that is the outputs and their costs that are tightly controlled;
- Outputs, namely the relationship among resources, processes and outcomes;
- Outcomes, focused on the impact of outputs on beneficiaries.

The last two are based on clearly defined projects and programs, quantifiable goals that set performance as a priority. Hence, the latter is evaluated in terms of the impact of outputs on society, which is the efficiency of the relationship among inputs-processes-outputs and the effectiveness ensured by the output-outcome interrelatedness as determined by the military sector salient features triggered by its mission to ensure national security. The table below presents the relationship between performance and types of budgets:

In an economy in transition, the efforts to ensure defense resources gain momentum and hence require efficient management procedures, improvement in financial systems, as well as in planning, strategic budgeting in order to efficiently and effectively allocate defense resources. It is in this way that defense resources management significantly contributes to the efficient allocation, management and use of available resources in accordance with the requirements set for accomplishing specific performance indicators.

Resource allocation optimization based on performance indicators elaboration and implementation

To choose and to operate an coherent resource allocation performance measurement system as part of defense resources management is to identify and define those concepts, notions, goals, objectives and outcomes that need to be quantified, as well as performance measurement instruments along with the procedures to use them. Moreover, defense resources management performance is about identifying, modeling, establishing, monitoring, evaluating and measuring employee's work, systems and processes required for resource allocation by using performance indicators. Basically, the performance incurred by budgeting in public institutions is a measure of an establishment's capacity to procure resources in an economic manner and to employ them efficiently in order to obtain the envisaged effective outcomes[3].

Thus, the performance indicators characteristic for defense resources management must be aligned to the activities they are related to and should facilitate the quantification and control of their inherent results. Therefore, a full agreement among the objectives and the indicators is needed. In this respect, a performance indicator is about the relationship among: objectives derived from political and military goals, clear-cut actions, capabilities, efficient and effective resource allocation. Inherently, its roles are to control conformity and to determine the differences among the final and foreseen results of performance indicators. Thus, for the short term, performance indicators generate automatic tuning, whereas for the medium and long term they act as management tools. Consequently, performance indicators in defense resources management are part of a cyclical process generating information that fuels the process itself, diagnosis performance and contribute to the decision making process.

Therefore, the analysis of defense resources management performance needs a system of relevant indicators to measure the processes, as well as their outcomes. Moreover, such a system allows for a quantitative and qualitative focus in the area since it is derived from goals, objectives and alternatives to be pursued.

The set of indicators needs to be quantifiable in order to reduce the level of subjectivity and it includes indicators referring to: inputs, outputs, outcomes and impact. In practice, a combination of all the above can be used for the efficiency of the measurement process and thus relevant standards are established. However, the features of these standards are determined by the characteristics of the activities unfolded or by the mission. Thus, a number of combinations can be used to generate standards like: *efficiency*, namely the relationship between input and output related indicators; *effectiveness* resulting from put-put and outcome; *economy* as the result between various output indicators; *productivity* as the result between input and output indicators; *unitary costs* as the relationship between total costs-input indicator-outcomes-output indicators; *costs-effectiveness* expressed as costs-input indicators-outcomes-outcome indicators.

However, when establishing the relevant criteria that define de defense resources management process there is some uncertainty especially in particular cases like the acquisition of specific capabilities. Once the initial decision is grounded in coherent logical and real premises related to the inputs, outputs, processes, outcomes and impact, the level of uncertainty decreases.

In conclusion, the establishment of a system based on performance indicators will become useful instrument for the decisions referring to the defense resources allocation process.

Conclusions

The premises underlying performance management as part of defense resources management presented in this paper yield a number of benefits for the military organization. As such, it offers a systemic approach that is outcome based and that is not excessively focused on processes. Moreover, it offers a system of accounting for the outputs and their impact on the overall decision making system at political, military and nation level. Therefore, by involving all stakeholders in defense resources allocation performance planning, measurement and evaluation their level of responsibility and accountability will increase.

Additionally, the identification and establishment of the elements required for the defense resources management performance evaluation facilitate the efficient and effective accomplishment

[3] Allen, Schick, *Does budgeting have a future?*, Organizaţia pentru Cooperare şi Dezvoltare Economică - OECD Journal of Budgeting, vol. 2/2, 2003, pp. 42-46.

of the goals established, guide the stakeholders and ensure timely and qualitative decisions.

In conclusion, the political and military decision makers must: establish sets of performance indicators for all organization processes based on clear procedures and in order to measure the inputs-outputs-impact; understand the expectations of all stakeholders involved in defense resources management; correlate the output and impact parameters with the inherent processes in order to create and support a coherent and efficient feedback, as well as to facilitate the adjustment of specific, measurable, achievable, realistic, and relevant objectives; track results in order to identify the trends in the core processes and their related parameters.

ACKNOWLEDGEMENTS

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RELATIONSHIP-BASED APPROACHES OF INDIVIDUAL AND ORGANIZATIONAL BUYERS

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Abstract: *The behavior of individual and organizational buyers has certain implications upon the specific marketing of a product or service. There are many differences between the marketing of the consumer and the marketing of industrial goods; however, resemblances between them should not be overlooked. In this respect, the projection of the marketing strategy of market extension, based on the discovery of a new product /service, or the improvement of the one already existing on the market, is performed in order to satisfy the expectations and aspirations of each potential segment of individual and organizational consumers. Their buying behavior has to be studied continuously, in order to be able to make timely corrections. The paper presents a few ways of approaching the buying behaviors mentioned above, taking into consideration their specific peculiarities of performance and evolution.*

Keywords: *buying behavior, individual consumers, organizational consumers, current consumers, potential consumers, the buying decision process, evaluating suppliers' performance.*

Individual consumers' behavior

The on-going development of current markets prompted the companies which produce and deal goods and services to study and analyze, in as much detail as possible, the behaviors of individual and organizational consumers, starting from their demands and needs of consumption in various periods of time.

Generally speaking, *behavior* is considered to be a range of external reactions through which the individual reacts to stimuli. In this context, we may define the individual consumer's behavior as all the acts and decisions regarding the use of his/her income for buying and consuming goods and services or for saving money. Psycho-sociology applied to the economic domain analyzes the consumer's behavior.

Specialists in marketing study the buyer's behavior in order to determine the factors influencing buyers' choices. Buyers can be divided into two categories: individual and organizational (including users). Both types have implications for the marketing of certain products or services.

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Individual consumers are those who purchase products or services in order to use them personally as commodities.[1] They can be the users or beneficiaries of these products (services). They purchase goods both for their daily needs, and in order to express their personality, to display a certain attitude, to indicate their role in society, to express their opinion, to demonstrate their value, or to show their welfare. Thus, products or services are purchased not only for satisfying the physical needs, but also the sociological and psychological ones.

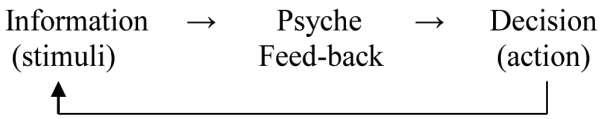
Organizational consumers purchase products or services on behalf of the organization they work for, in order to meet its consumption needs.[1] They purchase components for the products that are joined together by the organization, they purchase disposables and accounting services; they purchase the equipment necessary to the organization for obtaining the own products meant for selling. These buyers cannot give up on their personal attitudes and preferences, even when they are at work, their behavior as buyers having certain similarities with those of individual buyers. Their personal needs, however, are transferred to a secondary plan against the objectives of the organization, which makes

[1] Gheorghe Minculete, *Marketing,* „Carol I" National Defence University Publishing House, Bucharest, 2007, p. 41.

the factors influencing decisions and the processes leading to making these decisions differ from the consumers' input.

When making a decision regarding purchasing and consuming something or not doing so, the consumer is influenced by a series of internal impulses and a large variety of external stimuli which are afterwards processed by the psyche.

The *cybernetic model* of the consumer's psyche works on different *stimuli* which, when combined



with internal impulses, generate a certain *decision*.

Figure no. 1 Cybernetic model of the consumer's psyche

The consumer's behavior does not appear as a result of the action of certain endogenous and exogenous variables.

Endogenous variables include the individual's personal characteristics, his/her personality and representations regarding the goods and services meant to satisfy needs, perception processes, learning and thinking processes that take place on the mental level.[2]

The analysis of the buying behavior underlines the following endogenous variables: *needs; attitudes; motivations; own individual characteristics*.

a) *Needs* represent the cause of the purchase and consumption action in order to satisfy his/her physical and psychological needs. Abraham Maslow ranks in a pyramid the individual's main needs: *physiological needs, security needs* (the need to be protected from different hazards through: preventive medicine, insurances, etc.); *the need for belonging* (the need to be accepted and beloved by the family and group he/she belongs to); *the need for esteem; the self-actualization need* (which is the peak of human aspirations).[3]

Depending on the possibility to satisfy or not certain needs, the consumer will adopt a certain behavior, thus explaining the principle of human action dynamics.

b) *Attitude* represents the sum of a person's *sensations, beliefs, and convictions* regarding the situations, merchandise and services he/she is confronted with in order to satisfy his/her needs. Thus, it results that attitude is a latent, hidden variable of the behavior, an inclination towards certain actions.

c) *Motivation* encompasses all the objective and subjective factors, both conscious and unconscious, which determine the consumer to do certain things, to tend towards fulfilling certain objectives. It is a main source influencing human behavior.

d) *The traits characteristic to the individual* allow the valorization of three types of variables: *personality, self-image* and *life style*. Moreover, these traits include references to gender, age, family life cycle, income, education.

Exogenous variables (sociological and psycho-sociological) encompass all the factors characterizing the environment in which the consumer lives and acts.[2]

These factors include socio-demographical factors, income, prices (fees) of commodities and services, the influence of group relationships, of interpersonal relationships, of advertising means, etc.

In the vision of the cybernetic model mentioned above, the behavioral result is the consumer's decision regarding the purchase and consumption of certain material goods and services. Regarded as a whole, the mechanism of the consumer's behavior includes the acts presented in Figure 2.

A simple and general model of purchasing as a decision-making process includes, as it can be noticed in figure no. 3, eight elements: the revelation of need; the identification of the issue; searching for and investigating information; assessing possibilities; making choices; buying; the experience subsequent to the purchasing process (assessment, possible reactions).[4]

In order to buy, for instance, a winter man suit, an individual examines his financial means, visits a few supermarkets (usually one up to three or more), looks for information regarding the model, the quality of the fabric it is made of, the anthropometric measurements appropriate for him and then decides on the basis of anthropometric measurements the optimal choice to purchase, subse-

[2] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, pp. 42-43.

[3] George Medrihan (coordinator) şi colectiv, *Marketing.Concepte, Metode şi Tehnici. Strategii*, Editura Gama, Iaşi, 1997, pp. 65-66.

[4] Michael J. Baker, *Marketing,* Editura Societatea Știință și Tehnică S.A., București, 1996, p. 125.

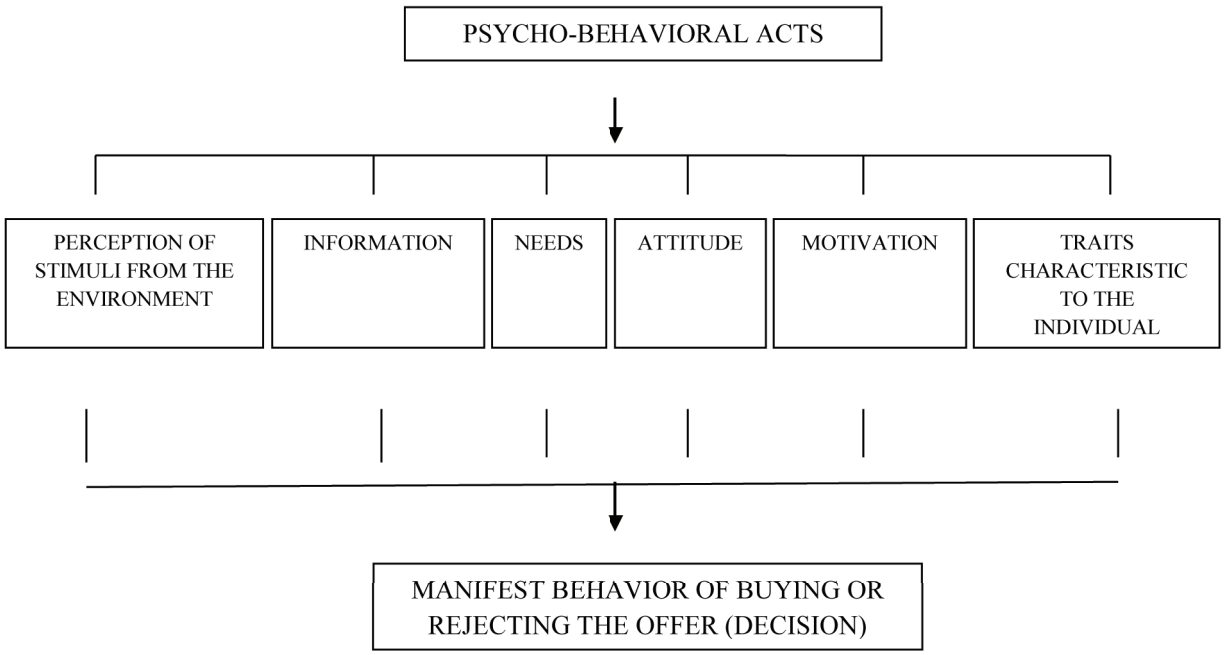


Figure no. 2 Mechanism of consumer's behavior

The decision making process regarding the purchase of certain goods and services by individual consumers

quently assessing the efficiency of the purchase itself, while using the product.

The sequence mentioned can be divided into four basic stages: *the decision-making process; the purchasing act; the usage period – that when it can be used; the post-usage assessment.*

Reference groups, social classes, individual circumstances, together with the individual's own culture and personal features, they all represent important factors in making the decision to buy something[5].

Reference groups are the groups within the general society a person interacts with in the decision-making process. They influence behavior in the following manner:

• information influence is exercised when a group is a credible source of knowledge, being specialized or having certain expertise in a certain domain. This type of influence explains the power rumors have on certain markets, especially the service markets, where it is not possible that a buyer may try the product before deciding to buy it. People count on recommendations received from neighbors or friends, considering them more trustworthy than the advertisement used by the producer;

• comparative influence appears when the consumer makes the decision to buy an object that will associate him/her with the group he aspires to belong to and dissociate him/her from the others. Teenagers, for instance, are significantly influenced by the brands accepted in their group and those that may exclude them from it;

• normative influence upon the buyer's behavior appears when a certain group exercises some pressure upon an individual so as to comply with his/her norms. The reward is being accepted in the respective group, while sanctions could be applied to those that do not comply with recommendations. This type of influence appears mostly with respect to visible products, such as clothes (for instance, in many organizations or institutions, the executives are compelled to wear a suit, irrespective of the weather; special night dresses are mandatory at weddings or on other occasions when women receive guests).[6]

The following part of the present paper is dedicated to presenting the reference groups exercising different types of influence upon buyers.

Primary groups[7] are those groups with which

[5] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 45.

[6] Elizabeth Hill, Terry O'Sullivan, *Marketing*, Editura Imprimeria de Vest R.A. Oradea, 1997, pp. 57-58.

[7] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 46.

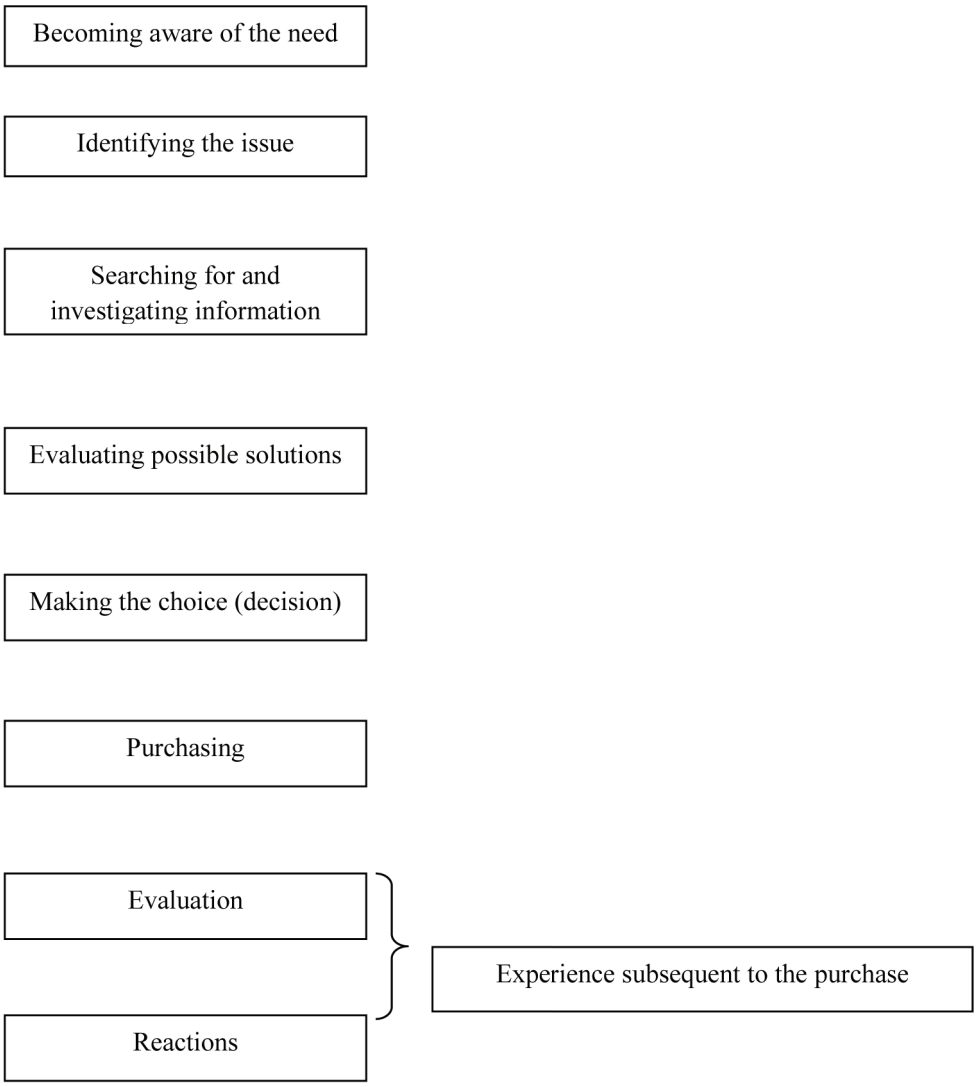


Figure no. 3 Stages of the decision-making process when purchasing something

an individual has regular relations. This group includes friends, neighbors, colleagues and family. Their influence may be felt in all the ways shown above, especially the first two.

Family is one of the most important primary groups influencing the buyer's behavior, as it is the group that most people interact the longest with. It is the family that establishes behavior models that a person may learn from childhood, which may lead to increasing the preference for certain brands. The selection of various products or services, such as: detergents, coffee, banking services or holidays may be influenced by family norms. In order to attract new clients, marketing experts have to make up strategies so as to defeat the consumers' mental restraint and determine them to break family norms.

Secondary groups[7] are those groups with which people interact more officially and less regularly. These groups may be religious gatherings, sports or social clubs, professional bodies. These groups are the ones capable of exercising the most powerful normative influence, through their own statutes, hence the fear of being excluded, for instance, from a golf club because of inacceptable demeanor.

Social classes (also known as socio-economic groups) are groups of individuals coming from the same social and economic circumstances, who see themselves as possessing the same social status. The basis for defining these statuses differs from one society to another, but generally speaking it is related to job, income, education, and wealth (Figure 4)[8].

Students usually fall into the third category. The retired who live on pensions usually maintain their previous status.

People tend to establish interactions with those

[8] *Ibidem*, p. 59.

No.	Social classes
1	Top-level administrative or professional leadership positions
2	Intermediate-level administrative or professional leadership positions
3	Clerks in administration with minor or less influential administrative or professional leadership positions
4	Qualified workers
5	Semi- or unqualified workers
6	Occasional workers or those performing „demeaning jobs"
7	Retired people
8	Long-term unemployed people

Figure no. 4 Social classes necessary for performing the marketing study

belonging to the same social category and thus each social class has about the same values and behavior model. For instance, certain social categories watch certain TV programs more than others; others are more inclined towards participating in shows and sports events; the loyalty for food products is smaller for those in the middle class. That is why, it is very important that marketing answer various groups in various ways.

Individual circumstances are created by demographic structures. On an individual level, the gender, age, marital status, income, and education of a person have a major influence upon making the decision to buy something[9].

Gender has an obvious influence upon making the decision to buy something. Especially due to the social norms lasting for centuries, men and women buy types of different products and use different criteria for choosing them.

Age determines certain decisions of the buyers. The type of entertainment they prefer, whether they are still students or they are working, the health-related needs, the preferences for certain styles or trends, they all change throughout somebody's life and thus the shopping they do will change too. The family life cycle is very much connected to age.

With respect to the marital status, in 1966, Wells and Gubar described the forming stages and the evolution of a typical family, indicating the types of consumer with the one that is most probable to be associated with each of these studies. For instance, the young people who are single spend much more on clothes and entertainment than other groups. They may have smaller income, taking into consideration the fact that they are only at the beginning of their careers, but they also have less financial obligations and are in the position of spending much more for their own preferences.

Figure 5 presents the links made according to the studies made.

The income is often related to demographic characteristics, but not in an exclusive manner. A person's income may vary due to different reasons, such as: the interest installments, unemployment, or inflation. Certain products or services are more sensitive to the level of income than others. A person whose economic means are reduced suddenly will also reduce his/her expenses, the first on top of the list being the long-term usage products and entertaining activities. The main criteria used in making decisions will become price and level of functionality.

Education is usually connected to income and social class, but also has certain interesting influences upon the consumer's behavior. Those who have graduated only high school have different behaviors from other groups. When they choose

[9] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 47.

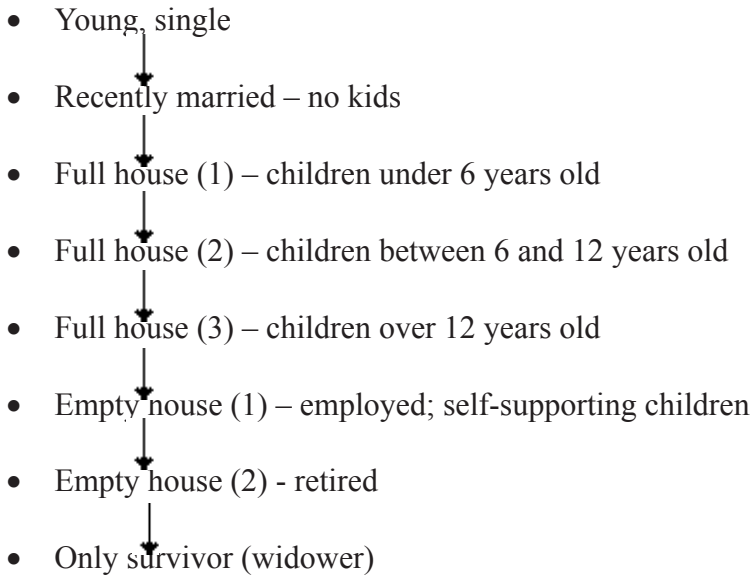


Figure no. 5 The life cycle adapted according to Wells and Gubar model (1966)*

*Michael J.Baker, *op.cit.,* p. 132.

among different products, they are not inclined towards analyzing unknown brands or comparing prices, but base their choice on tradition, brand image and personal experience. This influences the manner in which marketing specialists have to address this category. Instead of offering detailed explanations about the product, they have to emphasize the confidence in the respective product and the producer's image.

Personal characteristics, the individual factors linked to his/her psychology influence a person's decisions. It is natural that people of the same sex, who are also in the same stage in the family life cycle and have the same income level, to have different personalities and life styles, to be motivated by different purposes, to have different beliefs and attitudes, and different visions.[10]

A person's individuality is immediately visible in his/her *personality*, while character traits, such as sociability, self-confidence, shyness, or aggressiveness are those who make the individual react predictably in the situations they are confronted with. If marketing specialists understand the reactions of the different types of personality to different types of products, they may project the own brands, so as to answer these needs.

One of the ways in which consumers express their personality is the life style. In 1994, Kohtler and Armstrong described life style as being a person's model of living, exactly as it is expressed in his/her activities, interests, and opinions. These activities may be the following: work, entertainment, sports, hobbies, holidays and involvement in community actions; the interests may be the following: family, food, recreation, fashion, music; the opinions may concern education, politics, social welfare, personal relationships, religion. The tangible side of the life style consists in the way in which the person spends his/her time and money in order to interact with the environment. This aspect may be measured (through a technique called psychological profiling), thus allowing the grouping of individuals with the same life style. Different groups choose different products and answer positively to different images, offering marketing specialists the possibility to make their offer according to these demands[11].

The direct measurement of an individual's needs results in norms of consumption. Making a statistic analysis of the consumption budgets of a medium-size family, for instance, two adults and two children, we obtain the normative budget. The analysis of the dynamics of consumption on different categories (segments) of population results in the tendencies of revolutionizing certain needs, in direct connection to the purchasing power and preferences of the different segments studied.

The actual consumers (A.C.) are those individuals who consume the product / service analyzed at the reference time **t**. The causes determining this consumption are based on the

[10] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 50.

[11] Kotler, Philip Keller, Kevin Lane, *Managementul marketingului*, Ediţia a V-a, Editura Teora, Bucureşti, 2008, pp. 31-32.

necessity to satisfy the own need, the existence of the purchasing power, having knowledge about the market offer and options.

Potential consumers (P.C.) are those individuals who are not consuming the respective product / service at the moment, for different reasons, but who in the near future may become actual consumers, as they have a need that is not yet satisfied. The causes may be: not knowing the existence of the offer, the lack of attractiveness of the wrapping, the price, dysfunctions in distribution etc.

Marketing specialists have the task of identifying the size of the potential consumers' market and the factors determining them to currently consume the respective product. The next is projecting the marketing strategy of market extension, based on discovering a new product / service, or improving the one already existing on the market, according to the expectations and aspirations of each potential population segment.

Non-consumers (N.C.) make up that category of population who are not currently consuming the product analyzed, nor will they consume it in the near future, just because they do not need to do so, as the need is missing altogether.

Figure no. 6 is a graphic representation of the consumer categories mentioned above at two different moments in time, $t_0 + \Delta t_0$, where we used the following symbols:

- TP – total of people on a certain market;
- MR_0 – market reserve, made up of potential consumers;
- A, B, C – actual consumer market for the competing products **a, b, c**.[12]

We notice that at the moment $t_0 + \Delta t$, the **c** product has vanished from the market (possible explanations: fusion, withdrawal from the market, bankruptcy etc.), but a new **d** product has emerged; the potential consumers PC_0 have all become actual consumers AC_1, so as the reserve market RM_1 tends towards zero. Practically, the firms making A, B and D products have adopted extensive marketing strategies, while the number of non-consumers has remained unchanged, as these people still lack the need.

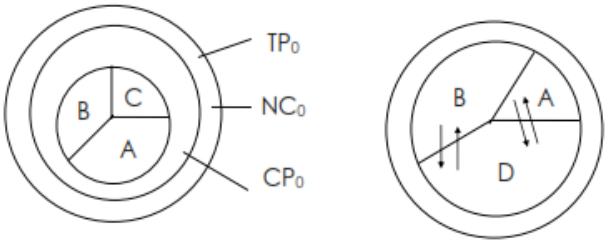


Figure no. 6 Dynamics of actual and potential consumer market

Depending on the financial means and behavioral traits they have available, buyers may be:

- *relaxed* – those who are prepared to buy new products; they pay close attention to the wrapping and display and are not interested in the price;
- *rigid* – those buyers who make and use lists of shopping to be done and only rarely deviate from it. They do not pay almost any attention to the requests of the other members of the family and shopping is done quickly. The people in this category can be further subdivided into two groups: those who are rigid because this is the structure of their personality and those who are rigid for economic reasons.
- *controlled* – most people belong to this category.

Buyers use shopping lists for their basic necessities, but most decisions are made on the spot, the manner in which products are wrapped and displayed acting as an incentive.[13]

Organization buying behavior

In the current economic circumstances, the role of the organizational buyer is to find products or services of acceptable quality in exchange for the lowest price possible, so as the organization might have low costs and thus make bigger profits. Due to the complexity of decisions, there are several stages in the decision making process.

Although there are many differences between consumer marketing and the marketing of industrial goods, we must not ignore the resemblances between them, given the fact that with respect to both organizational and individual buying behavior, the process is basically the same.

One of the first serious attempts of imposing a certain structure to the huge amount of descriptive materials depicting the industrial procurement

[12] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 52.

[13] Michael J. Baker, *op. cit.*, p.141.

behavior was made by Frederick Webster Jr.[14], who characterizes it through four key domains: acknowledging the issue; taking responsibility for procurement; initiating the research process and undertaking the selection process. All these steps are essential stages in the general buying behavior. Establishing objectives, as well as acknowledging the issue are influenced by personal and impersonal factors, internal and external to the organization, which leads to the conclusion that they need to be identified and analyzed, if one wishes to understand the decision to buy something made by an organization.

Another important contribution on this topic was brought by P.J. Robinson, C.W. Faris and Yoram Wind[15], who presented the results of a project sponsored by the Marketing Institute. Starting from the extensive study of three companies in the United States during an interval of two years, the three specialists made the proposition that industrial procurement be conceived as a process made up of eight sequential steps, also known as buying stages, namely:

- anticipating or acknowledging an issue or a need, including understanding the fact that there is an issue, as well as becoming aware of the fact that it may be solved by the procurement of an industrial good;
- determining the quality, quantity, and characteristics of the necessary item;
- describing the necessary item; searching for and characterizing the potential sources;
- examining the sources in order to make a decision referring to the way in which the product is going to be procured;
- evaluating the propositions and selecting the suppliers; choosing a manner of making and placing the order;
- evaluating and receiving feed-back related to efficiency[16].

We consider the model above extremely suggestive, as it is easy to learn and, in addition, if one identifies the decision and the current stage of the procurement process, one may also identify very quickly the key factors specific to the respective place in the pattern. For instance, in case of most processes of direct repetition of the procurement process, procedures may be established for automatic orders made to homologated suppliers, if the previous order satisfied the demands.

From the non-profit-organizational point of view, marketing objectives and activities in procurement refer to: the initial marketing programming for analyzing consumption and usage needs; prospecting the local (territorial) or national market; initiating the mechanism involving procurement techniques and procedures; initiating the actual selling-buying relationship.

The initial marketing programming for analyzing the consumption and usage needs comprises the following: analyzing the material and financial resources that have to be ensured starting from the procurement plans made by the specialists in the field; studying the purchasing means from the area, regional, or national market environment; establishing the assortments that have to be procured; setting standards and contracting conditions for products and materials that are to be procured; setting the procurement procedures that must be followed starting from criteria of opportunity and efficiency.

Prospecting the local (territorial) or national market presupposes the following: identifying numerically and finding all the economic agents of interest for buying products and materials; establishing the sources of information necessary to the study of suppliers and their offers; investigating the elements related to the structure of the offer, emphasizing the following indicators: the selling price, the quality class, performances, degree of usage (consumption), services offered and closeness to sources of supplies; collecting all the necessary information about initial suppliers, on the basis of the following criteria: the level of the turnover, the social capital, the indebtedness ratio, the credibility and honesty in business etc.; the analysis of the offerer's management capacity to perform a proper management of the exchange actions during the selling/buying process; the analysis of the competition between the providing companies that have the products or materials that need to be procured by the army; the study of the competition among the military units and the major military units interested in purchasing the same product (material)[17].

The mechanism involving procurement

[14] Frederick Webster Jr., *Modelarea procesului industrial de achiziție*, în *Journal of Marketing Research,* noiembrie 1965.

[15] P.J. Robinson, C.W. Faris, Yoram Wind, *Industrial Buying and Creative Marketing*, 1967.

[16] Gheorghe Minculete, *Marketing,* "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 53.

[17] *Ibidem,* p. 57.

techniques and procedures (auctions, competitive dialogues, negotiations, demands for offers etc.) necessitate: naming a board of specialists; elaborating the documentation specific to the procurement process; advertising; receiving offers and participation guarantees; opening, evaluating, analyzing, and comparing offers; making the de decision-related documents (decision, proceedings and so on); choosing the most reliable economic operator; communicating results and returning the participation guarantees.

Initiating the actual selling-buying relationship needs the following: making the commercial sales contract with the supplier accepted in the legal term, simultaneously with receiving by the beneficiary of the performance bond; issuing periodically procurement orders, according to the provisions of the delivery graphs; the periodical reception of products (materials) made at the supplier's registered office; the transportation of the goods delivered with the means of the supplier or the beneficiary, according to contract specifications; reception of products (materials) procured from the beneficiary's registered office; disconnection and pay of goods by the supplier in the period set after delivery; depositing (keeping) and holding the evidence of the goods received; following the manifestation of the hidden vices during keeping or on the occasion of internal distributions for consumption (using, functioning) and the controls made.

The role of the organizational buyer is to find products or services of an acceptable quality at the lowest price possible, so as the organization may have lower costs and obtain profit from it.

Due to the complexity of some of the decisions made by the organizational buyers, there are several stages of the decision-making process. Mainly they are six: *identifying the issue; choosing the product; looking for the supplier; choosing the supplier; ordering; evaluating performances.*

Identifying the issue is similar to "perceiving the need" in case of the individual buyer and consists in establishing, by the decision makers, of goods and services that really need to be purchased in order to accomplish certain objectives (goals, functions) of the organization.

The representatives of the buying beneficiary (procurement compartments, specialized boards etc.), that have great expertise in purchasing goods, first make a general description of the products that have to be bought and the necessary quantities.

Looking for the supplier happens according to the time allotted to the procurement procedure that is to take place, through an advertisement in case of open auctions or through invitations directly addressed to the identified suppliers, in case of organizing closed auctions, the demands of offers, the direct negotiations, etc.

Choosing the supplier is performed by comparing the attributes established within the procurement process.[18] The attributes may be purely functional, such as *price, delivery, quality, service*, but may also include less tangible features, such as the *policy of the providing company* or *the communication abilities*. The chosen contracted supplier will be the one that best fulfills the main criteria.

Ordering the product / service may be unique or may take the shape of a long-term contract. Invariably, its terms will include the payment means; if most individual buyers pay cash before receiving the product, organizations establish different payment means, first receiving the goods and paying for them in the period of time stipulated in the contract (most times the suppliers ask the new clients for references).

The buyer collects data regarding *the suppliers' performances* and uses this source of information when a similar product is needed. Sometimes, this is used as part of a system of motivating suppliers for maintaining increased levels of performance. The same way individual consumers increase or reduce the efforts implied by the decision-making process, function of the product they intend to buy; organizational buyers will approach the different stages of this process according to the nature of the purchasing tasks.

Thus, there are three possible buying situations (Robinson, Faris and Wind, 1967):

- *direct re-purchases* – when the buying process is a familiar, repeated task, it becomes a sort of routine and orders are made directly to the accepted suppliers. The study of choosing the supplier is made automatically, which makes it difficult for other suppliers to get into the business. The buyer resorts to routine in order to reduce the effort and it is highly likely that he / she will be very reticent to change it, unless the new supplier comes with a considerably better offer.

[18] Gheorghe Minculete, *Marketing,* „Carol I" National Defence University Publishing House, Bucharest, 2007, p. 60.

- *different re-purchases* – if the buyer becomes unsatisfied with the routine re-purchases for no matter what reason, he / she may decide to take into consideration other suppliers too; the objectives being to obtain better prices, to change the product's characteristics, to improve deliveries or only to increase the efficiency of these purchases.
- *new tasks* – these are most decisions to buy which the buyer encounters for the first time. In this situation, all the stages of the decision-making process become significant, although choosing the product and the time the buyer will spend for selecting the best supplier varies according to the value of the product and its importance within the operations of the organization.

Conclusions

In the domain of public organization, both the stages of the decision-making process and the types of purchase equally depend on the laws in force at the moment when the specific purchases of goods take place. Generally speaking, the information presented is applicable, taking into consideration the completions made through the legal provisions for each procurement procedure separately.

Recently we have noticed a trend of growing importance of the producers of merchandise and services due to the increasing qualitative and quantitative marketing research developing in the field. Therefore, under these circumstances, new solutions are provided with respect to the following aspects: the (individual and organizational) consumers' reaction to different market stimuli; the possibility of acknowledging various models of consumption through their characteristic habits; the possibility of becoming aware of the consumers' perception regarding various brands available on the market; the common testing of products, etc.

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FORMS OF FATIGUE - PHYSIOLOGICAL FATIGUE

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Abstract: *After efforts which are not beyond the functionality of the body, physiological fatigue installs manifested at both peripheral and central level.*

Keywords: *acute peripheral fatigue; acute central fatigue.*

Fatigue is estimated based on some quantitative and qualitative aspects of its manifestation.

Bugard quoted Bota, C. (2000) presents the stages which are installed in a tired body, as follows:

- Stage I - fatigue with harmonious response - is specific to athletes;
- Stage II - fatigue with oscillating response - occurs when recovery is incomplete;
- Stage III - fatigue with discordant response when to the physical state of fatigue is added a mental fatigue and sometimes a disease state;
- Stage IV – with exhaustion - pathological condition, including besides scope of the muscular system, the neuro- vegetative, metabolic and endocrine.

Between fatigue and exhaustion there is a quantitative difference, in which the phenomena of fatigue disappears within 24 hours while recovering from depletion processes require a minimum of 4-7 days with a complementary medical therapy.

If fatigue is installed after a sporting effort which does not exceed the functional capacity of the body, it is estimated that fatigue is a physiological form, its manifestation is in muscles (peripheral) or at neuro-psychological level (central).

Weineck, J., (1995) orders manifested forms of fatigue in acute fatigue (peripheral and central) and chronic fatigue (local and general).

Brătilă, F., (2002) quoting Stegemann, classified fatigue in: acute fatigue (peripheral and central), local and general fatigue (associated with overtraining) and neuro-muscular fatigue.

Drăgan, I., (2002) systematizes fatigue as physiological form and pathological form.

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PHYSIOLOGICAL FATIGUE

Physiological fatigue manifests as:

- Acute peripheral – muscle fatigue;
- Acute central – neuro-psychological fatigue.

Acute peripheral fatigue (muscle fatigue)

Muscle fatigue is caused by repeated muscle contractions, which consume energy reserves, disrupting homeostasis (physicochemical balance) of the body. Fatigue accumulates gradually, depending on the duration and intensity of exercise, reaching a point when exercise can no longer be continued, which causes termination of execution.

According to Drăgan, I., (2002), muscle fatigue can be caused by the following energy order reasons:

- Depletion of muscle creatine phosphate reserves, in the case of anaerobic efforts (0-45 sec);
- Depletion of muscle creatine phosphate reserves and increasing the concentration of lactic acid in the case of short endurance exercise (45 seconds - 2 minutes);
- Increasing muscle lactic acid, accompanied by increasing hepatic ammonia, in the case of medium level of endurance efforts (2-10 min);
- Depletion of muscle glycogen in the case of long endurance type I and type II (10-35-90 min);
- Depletion of muscle glycogen, accompanied

by the accumulation of lipid peroxides in the case of long endurance efforts type III - IV (90 min – 6 hours – over 6 hours).

In addition to the limits of the energy order, fatigue may be induced by other causes, such as:

- Intramuscular ionic imbalance; contractions with long duration and frequency cause loss of potassium and calcium, which has the effect of further reducing of muscle contraction ability;
- Fatigue at the neuromuscular synapse level, which disrupts sending of command from motor level to the muscles;
- Type of fiber, white fibers (phasic) get tired more easily than red fibers (slow), considered resistant to fatigue;
- Lack of oxygen caused by insufficient blood supply to the muscles.

Muscle fatigue can be recognized by a series of clues, signs, subjective and objective aspects, such as:

Subjective aspects:

- Feeling drowsy throughout the body;
- Feeling of heaviness in the muscles and movement;
- Feeling pain in pressure of muscle mass;
- Desiring to reduce or terminate the effort and need for rest.

Objective aspects:

- Reducing work capacity, physical efficiency;
- Increasing of muscle tone in rest;
- Decreasing of muscle tone in effort;
- Impairing coordination and muscle control;
- Decreasing of neuromuscular excitability;
- Decreasing of strength, range of motion;
- Decreasing of appetite, sleep disorders.

The mechanism of fatigue in muscle fiber

During muscle contraction, due to increased internal pressure, the capillaries are compressed and blood exhausted. During state of relaxation, muscle tension decreases, blood capillaries dilate and blood enters into the vessels.

When the contraction follow each other rapidly, the capillaries are compressed again, and in the interval between contractions, arterial blood does not enter in sufficient amounts, with oxygen and supporting substances for effort, thus reducing the capacity of the removal of toxins .

In extreme fatigue, relaxation time is small, which leads to a state of permanent contracture of the muscle, which results in a reduction of physical yield. In this situation, muscle excitability exceeds the one of corresponding nerve, which produces a state of permanent contracture of muscle, thus, cramps appearing. In a muscle area so contracted, with insufficient irrigation, substances intake recovery is reduced, requiring neurological and muscle recovery measures.

Therefore, muscle fatigue is a physiological reversible, which installs normally due to exceeding the limits of the functionality of neurologic and muscle system, as a result of considerable work. Muscle activity is conditioned by the energetic effort: the more demanding of muscle performance (in terms of volume, intensity, complexity), the sooner fatigue installs.

In sports training, in physical education lessons, the occurrence of muscle fatigue can be delayed by using rational exercise or by the optimal use of effort and breaks.

Muscle fatigue as a physiological form occurs as a result of an effort within the functional limits of the body, in this case becoming a contributing factor of adaptation.

In sports training or physical education activities, repeated efforts produce a degree of physiological fatigue (within functional limits) lead to higher biological processes of adaptation and improvement of training status and getting sports form.

If the fatigue is installed after overcoming the body's functional capacity, it is estimated that fatigue occurs in pathological form.

Acute central fatigue (neuro-psychological fatigue)

The concept of central acute fatigue or Neuro-psychological fatigue is defined as «diminished ability to perform coordinated action with the same precision as in rest» (Stegeman quoted Weineck, J., 1995).

Central fatigue has close connections with peripheral fatigue, because related information issued by the muscle (the periphery) has inhibitory impulses response, leading to discontinuation of effort.

Triggering causes of muscle fatigue attract the same functional and biochemical parameters changes in other vital systems, such as cardio -respiratory, central nervous, peripheral and autonomic system. Information about muscle fatigue (peripheral) affects nervous system and all body functions.

Physiological mechanisms, which result in the installation of central fatigue (neuro - psychological) are:

- Decreasing of blood glucose that has an effect on the brain, which is extremely sensitive to low blood sugar (eg. long endurance efforts III-IV - 90 minutes).

- Accumulation of essential amino acids in the brain disrupts neurons (force efforts); amino acids that are not metabolized (consumed) are accumulating in the brain, hence inducing neuronal disorders (eg. hyper protein food rations uncovered by appropriate effort).

- Neuro-psychological stress to athletes from disciplines such as: shooting, fencing, goalkeepers, high jump and pole vault, sprinters.

According to domain experts, central fatigue is recognized by the following *aspects*:

- Reducing of coordination capacity, cooperation between central nervous system and muscular system is disturbed, where one of the components of the control and regulation of movement is affected; muscle fatigue (peripheral) has the effect of reducing motor acts coordination, precision and economy of movement. Electrical activity of muscles increases with progressive installing of fatigue, which induces central fatigue manifested in the reduction of the coordination.

- Reducing of sensory performance capacity makes central fatigue to reduce functional status of component analyzers (peripheral segment of the receptor, leading segment, the central segment of the analysis and synthesis of information), the effect manifested in changing of optical, auditory, tactile sensitivity threshold.

- Disorders in mental phenomena regulatory function, because central fatigue reduce intake of psychological and nervous energy in sensory and cognitive processes. The mental process regulator – attention, loses the essential qualities of concentration and mobility (distributive). Installing of mental fatigue has the effect of reduction of intrinsic motivation for athlete activity.

- Disorders of higher knowledge processes are observed, because psycho- physical fatigue alters the ability of thought, the accurate assessment of information. Individual athlete mentally tired has difficulty assessing the distance, its own actions and reduced capacity of decision and motor reaction.

- Increasing of reaction time is found in physical fatigue, because it increases latency for simple motor response, but especially complex reaction, which is determined by: increasing of processing time information at central level or reducing of neurons and synapses functional status. However, physiological fatigue should be assessed as *a general mechanism for protection* against excessive stresses which occurs through:

- Sparing (protecting) of nerve structures whose neurons pass into a state of inhibition due to excessive stimulation or its prolonged action;

- Sparing of the cardiovascular system, the energy reserves of the heart muscle;

- Preventing of complete depletion of energy reserves, called "autonomous protected reserves".

Physiological fatigue is a favorable state in sports training, by installing the phenomenon of overcompensation, a phenomenon which improves body exercise capacity.

Preventing the installation of neuro-psychological fatigue is performed through management of sports training and compliance with measures and means of neuro-psychological and metabolic recovery.

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INTERNATIONAL ORGANIZATIONS AND THEIR ROLE IN THE PREPARATION AND PROGRESS OF POST-CONFLICT OPERATIONS

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Abstract: *The influence of current global geopolitical and geostrategic environment over the organization and development of the multinational operations results in a multitude of situations in which these interrelations are found, covering all levels of military art. A great part of these influences regarding the organization, progress and planning of these types of operations is already found in strategies, policies and regulations elaborated by NATO and its member states.*

Keywords: *NATO, European Union; Post-conflict; Organization.*

The preparation, coordination, and execution of post-conflict operations proceed according to some standards and rules included in the documents that regulate both generally and concretely each action according to its specific. These regulations are meant to unequivocally define the competences of different international organisms, of the internal ones from the states participating in the operation and of the military command structures. The authorities, which make use of the military force for deployment in post-conflict operation and that invest the commander with the exercise of the command, are those international organizations with consolidated legal status, that have prestige and unanimous recognition and that assume the role of solving conflicts (UN, OSCE, EU). Once the leading position assumed, the political organization sets up the purpose and the objectives of the operation, the allotted resources, the final targeted status and elaborates the mandate of the force that, mainly, contains: *"general issues, the purpose of the operation, the objectives that are to be accomplished, the mission of the force and the reference terms of the mission, the composition of the United Multinational Force, the appointment of the commander and of other special mediators, the nominalization of the structure responsible for the supervision of the operation (upper echelon), provisions regarding the logistic and financial support, specifications regarding the actions of the supporting organizations and the national responsibilities, the deadline of the mandate, the conditions and the terms that the host country intends to impose in connection to the presence of the force, regulations for the rights and immunities of the force staff."*[1]

Regarding the current geopolitical and geostrategic environment, at a global level, considering the ongoing conflicts and comparing it with the previous periods, we can state that this one is in a relative stability. Thanks to the efforts and, maybe to the weaknesses of the main important actors on the world scene, without doubt, the humanity is in a condition of relative peace and stability. The European space enjoys this period due to the existence, at the areal and regional level, of the two important organizations, NATO and EU, but also of the "step back" made by the Russian Federation. Nevertheless, the last events taking place in the East of Europe (the crisis in Ukraine) send us towards the idea that the relative condition of peace and stability tends to end. A clear proof that the states are trying to prevent a possible conflict is the substantial increase of the budgetary military allowances of the states in the immediate area of the crisis and not necessarily. From this perspective, NATO and EU, besides the fact that they generate a high level of economic development, they also approach in a modern manner the security phrase, by targeting the increment of the international cooperation level in order to solve the crises, on

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[1] Lucian Stăncilă, Eugen Constantin, Ion Pîrgulescu, *Operaţiile postconflict (Post-conflict operations)*, „Carol I" Natinal Defence University Publishing House, Bucharest, 2010, p. 76.

the grounds of some democratic values and that are led by common institutions.

Although reaching an unprecedented number for the interactions between the military organisms pertaining to EU and NATO, the efforts to define a defense policy common to the two organizations, was never materialized in an official document. Nevertheless, merging from the wish of becoming, in time, an important actor at global level, as its economic power is, the European Union focused its efforts to develop a European strategy in the field of the foreign policy. Thus, in 2003 the document "*A secure Europe in a better world. European Security strategy"* was drafted, highlighting the wish of the member states of the European Union to "get separated" from NATO and the USA in terms of regional, area and global security.

Also, regarding the highlighting of the European Union's efforts in the field of security and of the international relationships system, according to the dispositions of the Maastricht Treaty, the Common Foreign and Security Policy (CFSP)[2] of the European Union represents one of the three pillars of the organization alongside Justice and Home Affairs, as well as alongside the European Economic Community. Also, by the Common Foreign and Security Policy (CFSP), document proposed for ratification within the European Council in Helsinki, back in 1999, the member states of the EU defined the objectives of the organization on the military capabilities line, as well as over an extended area of military missions.

With an equally important role, the Organization for Security and Co-operation in Europe/OSCE, is an organization meant to prevent the conflicts and to administrate the crises and the post-conflict reconstructions, in the current security architecture, this is redefined as being an organization that promotes the continuous cooperation, but that develops an intervention civil component, meant to complete the military one held by NATO and EU, this being, in our opinion, a fair and credible process[3].

As for crises management, the United Nation Organization has a languishing role, indeed; also the international system where this organization acts includes both the State and Non-State Actors, with legitimate character, but which in some situations act in an anarchical manner, without a certain purpose. Furthermore, we may state that both in the past and in present, no international security organization shall possess the instruments needed in order to force the great powers to have positive feelings if their national interests are violated. UN is recognizes as being the sole organization possessing all the prerogatives necessary to convince the great powers to act, diplomatically, if their security and or their national interests are endangered. At the geopolitical and geostrategic level, the influence of the United Nations Organization over the states, as small as it is at the moment, as much it is foreseen to diminish in the future, given the fact that the decision making organism, the Security Council, shall certainly enlarge the number of members, which will lead to lack of efficiency in making decisions meant to limit the actions of a global actor or of a non-state one.

Regarding the organizations participating in the post-conflict operations, NATO could be the solution for various problems that emerge in this period of the crisis, the Alliance already holds unique expertise as for the military stabilization, also engaging in the civil-political field, quite carefully and slowly, as the "field" is almost unknown.

Even if the position of NATO is another one, with an international effort of creating post-conflict reconstruction capabilities, NATO could transform in a reconstruction international organization, along with this position assuming the main role within a reconstruction network, of global partnerships with states that are not members, but also with regional and international organizations.

We consider that post-conflict reconstruction needs a combination of military and civil expertise, aspect that is not met for any of the existent organizations. Thus, the achievement of a real interface within the cooperation between the civil and military staff represents a real provocation from the coordination point of view, but also in cultural terms.

We have sufficient reasons to believe that NATO represents the adequate organization for realizing this "hybrid". One of them would be the fact that NATO, even if it is a major actor within the reconstruction of the states, in this case, the reconstruction would be a priority, as are security,

[2] http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties_maastricht_ro.htm, accessed on May 24th, 2015, 6.00 PM

[3] http://www.osce.org/what/military-reform, accessed on May 24th, 2015, 6.20 PM

deterrence, and defense, aspect that would led to a change in the organizational character of the Alliance, as well as to a major extension of NATO missions.

From NATO point of view, within the cooperation between agencies, the civil organizations are responsible for a large series of activities such as: distribution of humanitarian aid, observance of the human rights, protection of minorities, refugees and displaced persons, legal assistance, medical care, economic reconstruction, agriculture, education, art, science and general funding projects.

The private or governmental and non-governmental international organizations of volunteers are based, most of them, on humanitarian principles. These can differ, from example, from the reduction of poverty up to the support of the medical system in the communities affected by conflict or up to the improvement of the living conditions of children.

The missions and the implication level of these organizations are usually recognized by the authorities of the origin state, by UN, by the government and by the authorities of the regional public administration of the state where they activate. The coordination and the cooperation with these groups may lead to the reduction of costs of the operations, to the prevention of duplication of effort, to the reduction of the possible contradictions or rivalries and to the improvement of the final results.

In the practice of the post-conflict reconstruction operations, acting in the fields where NATO (but also UN) engaged and continues to engage, three main types of civil organizations are to be distinguished:

1. *International organizations* (IOs) – these are set by inter-governmental agreements that operate at international level, as the different UN and OSCE organizations. Amongst the main UN organizations, most frequently implied in humanitarian actions within a post-conflict context, there are mentioned:

- *UNHCR – United Nations High Commissioner for Refugees*;
- *UNOCHA – UN Office for the Coordination of Humanitarian Affairs*;
- *WFP – World Food Program*;
- *UNICEF – UN International Children's Fund*;
- International Organization for Migration (IOM).

2. *Non-governmental organizations* – NGOs, these are structures made up by volunteers and they are not always sponsored by the government (on the grounds of art. 71 of the Charter of the United Nations). Their main characteristic is the fact that they are non-profit, they do not depend on their own governments, on the international organizations and on the commercial interests. In addition, their legal functioning framework differs from the one of the UN agencies and of other international organizations, having their own missions and principles. NGOs may belong to one of the following two categories:

- *accredited* – being officially recognized by the international organization responsible for the operation or by the government of the host country and authorized to deploy their activity in the operation area or that obtained a certain type of specific mandate;
- *non-accredited* – that are not officially recognized and do not hold official authorization, and hence, their activity is strictly private. These can be employed by certain international organizations or by other non-governmental accredited organizations. In other cases, they have the possibility to obtain funds from donors or from private companies. The non-governmental organizations are becoming more and more numerous and difficult to follow, and their presence in the operation area may be estimated at a few hundreds. Generally, these organizations remain independent of any political control, with the purpose of maintaining the own efficiency. In most of the cases, the members of this organization are considered as being good professionals in their fields of activity, extremely well motivated and always ready to assume physical risks in extreme conditions.

The non-governmental organizations are usually accredited by the host nation or by the organization or agency leading the operation. Sometimes, they are not accredited and this can determine the apparition of some local tensions.

3. Donor *governmental agencies*, national and international, such as Unites States Agency for International Development – USAID, Department for International Development – DID-UK, Canadian International Development Agency – CIDA, European Community Humanitarian Office – ECHO, have as main responsibility financing, monitoring and assessing the development programs that, in theory, should be coordinated by

the international organizations.

4. *Other groups*. In addition to the listed types, the following groups have to be mentioned too:

- *civil development agencies* – civil organizations that are mainly implied in reconstruction. These are accredited to provide assistance for the development of the countries. The United Nations Developing Program (UNDP) administrates and coordinates the development of the technical assistance provided by UN. Normally, these agencies deploy their activity for a longer period than the military forces in the affected areas. In these cases, the task of CIMIC is to identify the requirements for reconstruction in collaboration with the local government and, when possible, together with the agencies directorate, to begin and to continue the post-conflict reconstruction work. The reconstruction agencies have allotted the necessary resources for planning and developing the projects within the affected areas on the grounds of the evaluation and of the setting of priorities for the existing needs;

- *agencies for human rights and democracy* – The main agency in this field is UNHCR – United Nations High Commissioner for Refugees and the Democracy and Human Rights Office within the Organization for Security and Co-operation in Europe - OSCE, even if the latter one operates only in Europe. These agencies aim to protect the human rights in the states where the abuses may overcome the acceptable limit. They seek to establish the democratic values and the observance of the rules in all the levels of the government.

In the perception of NATO, mere theoretical knowledge is not sufficient for understanding and dealing with crises, instead it must take into account the specific of the local structures, of those making the decisions, and of the experience of other countries *("the history of the others shall be our future"*), situation that NATO considers also in practice, by the policies promoted. Of course, there are also failures of post-conflict reconstruction, as not only humans learn continuously, but also the institutions, that, although they reached a certain structural maturity and obvious experience, must be reformed from time to time.

In conclusion, we can state that NATO has the experience and the tools necessary for good management of post-conflict reconstruction. The management of post-conflict reconstruction requires knowledge of the threats, risks, anticipating and preparing reactions, finding the necessary advice and solutions, as well as optimal communication with the population that must be prepared and advised regarding the decisions made and the respective situation.

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FEAR AND INDIVIDUAL OR SOCIAL BEHAVIORAL REACTIONS

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How strange that man often fears
what he hopes. (Gustave Flaubert)

Abstract: *Human behavior largely depends on individual peculiarities of personality, but also on environmental aspects, the novelty or the spontaneity of the situation. In extreme situations, everyone reacts differently. One of the factors that generate specific behavioral reactions in such situations is fear – an emotion characteristic of danger or the perception of danger. The discrepancy between our own resources and the surrounding world's imbalance requires forced autonomy on the part of the individual and decision-making for his own safety and rescue.*

Fear expressed in society is conditioned by historical development of nations. Behavioral reactions of nations in situations which pose a threat to their own integrity indicate values and power of influence of states and peoples. The presence or absence of fear shows the historical evolution of the Romanian people.

Keywords: *fear emotion; danger perception; personal safety; behavior, social fear; the fear for Romanians.*

Introduction

Human nature has evolved over the centuries, being constantly dominated by basic needs, such as food and survival, which generated primary instincts of self-defense and acquiring resources. Although progress and development of civilization have resulted in the emergence of superior needs on a cognitive and spiritual scale, to the need for self-realization (and I am compelled to insist that it is present only in a small number of people), the range of vital needs has widened too. The quality of a man's life depends not only on education, skills, material wealth, but it often relies on other factors such as the presence or absence of water and food, the air temperature, sun radiation and wind power. The quality of human life largely depends on the environmental conditions where man is born, grows and lives. The most important thing is how people perceive their current state and how well they are prepared to overcome the hardships of life, especially unexpected and uncomfortable situations, and how much strength and skill they are able to muster in those moments.

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The crisis situation and fear

Sometimes life puts us in front of unexpected situations that we have to go through. Such situations are called, depending on the viewpoint approached, tightrope situations, emergency situations and crisis situations. In the context of individual and group security, I will now refer to crisis situations. What constitutes a crisis situation? It is an unexpected moment which we cannot predict and which may suddenly spin out of control. In general, crises take us by surprise, and our reaction must be prompt, genuine and consistent with the conditions created and adapted to the changes that occur along the way. Not many know how to get out of such situations, because by being caught by surprise and off guard, the vast majority does not know how to react, especially if faced with such an event for the first time in their lives, for we are all different from each other and react differently to crisis situations. It all depends very much on how emotionally balanced we are and, moreover, what knowledge and training we have.

The crisis at the individual level is when man faces a corruption of internal or external conditions which is a major obstacle that limits his possibilities and cuts off his life goals (Caplan, 1961). This situation cannot be overcome with their own

resources and with the usual methods. A stage of disarray sets in at first, followed by depression, then the individual tries implementing various methods to solve the problem. If a crisis is successfully dealt with, the individual learns to react appropriately to such situations, acquiring effective behavioral patterns. Otherwise he will be overcome by fear and panic, not to mention behavioral and psychiatric disorders.

According to Charles Darwin's theory, existing species survived only because they had been able to evolve and adapt to changes in their environment. In other words, to ensure our durability, we need a natural mechanism to go through almost any dangerous situation effectively. Crises are a mandatory part of our live, which is often unpredictable, and the most important thing to understand is that no one is safe from evil. Experience shows that every person, organization, state or civilization will face critical moments sooner or later. Modern dictionaries of terms and concepts define crisis as a difficult, almost impossible situation to predict, a critical lack of something, a painful period of transition, a sudden, sharp change.

In the case of security crisis, when physical, psychological or socio-economic safety is jeopardized, man is involuntarily taken out of his comfort zone thus running the risk of losing stability, his structure order, his own existence or integrity. This frightens him, uncertainty and anxiety arise, together with helplessness and discouragement, loss of control, lack of confidence in the present and in the future and a *feeling of fear* occurs as a universal consequence of the state of imbalance. Fear may occur as a consequence of threat not only on one's own human conditions, but also on another person or very close group of people, on private property or living and working conditions. In such a context, man feels unsheltered, exposed, miserable, powerless and overwhelmed. Man realizes through fear that his existence may be destroyed due to the loss of stability in the world or due to perceived aggressions around him.

Here is a list of major risk factors posing a potential threat to the life and well-being of man:

- natural hazards (earthquakes, flood, storms);
- environmental disasters;
- industrial or transportation accidents;
- fires;
- shipwreck;
- events and fights which lead to greater destruction causing death or injury;
- events which cause suffering to a great number of people, the death of relatives and close friends.

In a crisis situation, the general and specific psychological aspects of people's reactions should be taken into account. Sensitivity to the effects of stress is increased for the elderly and those with psychosomatic disorders. Knowledge in the psychosocial field is necessary to prepare the population in general and the rescuers and authorities as well so that they will react promptly and effectively in extreme situations.

Fear from an existential viewpoint

One must first be clear about terminology to understand what fear is from a psycho-behavioral point of view and also the possible conditional reactions to fear. Fear can be understood as the emotional response that sets in when pain and other threatening stimuli occur. Fear is actually the specific emotion which sets in because of danger or perception of danger. I shall compare the different definitions and views of some authors. I will consider the definition given in the Explanatory Dictionary of the Romanian Language as a benchmark[1].

From a formal genetic point of view, fear is seen as a discrepancy between the individual's own resources (courage, competence, possibilities, means) and instabilities in the surrounding world (insufficiency, insecurity, fragility). This can be explained as a *"a general spontaneous reaction of coping, which produces an attitudinal reflex (increase in muscle tone, physical and mental alarm reactions) and the search for shelter, safety and stability in the face of an abysmal threat to existence"*. Although this definition is complex and comprehensive, we will also take into consideration other points of view related to the notion of *fear* which will broaden the scope of interpretations.

Fear, as a state of generalized excitation, is not only the expression of jeopardizing physical integrity but also of psychological components. The danger destabilizes existing structures that guarantee the continuity of life. Without confidence in

[1]DEX: FRÍCĂ, (rarely) frici, s.f. A profound state of unrest and diseorder, sparked off by a real or imaginary danger; lack of courage, fear, terror. [..] – Cf. gr. Phrikē –http://dexonline.ro/definitie/fric%C4%83.

the security, stability and protection, existence becomes frightening. From an existential context, fear is considered a subjective parameter regarding total or partial threat to integrity and existence, to those aspects of human life that makes one feel safe.

According to the Bible[2] fear can also be defined as a *virtue*. So fear sets in as a prevention and protection alarm in the face of danger. On the one hand we notice man's unshakeable connection to life and fear of anything that might take it away from him or of what might harm him; hence the effort to protect himself and perpetuate his own existence and those close to him. On the other hand, we always bring up the fear of sin and, therefore, the fear of divine punishment; and on a much higher and advanced spiritual level - the fear of being separated or banished by divinity. Man's fear for his life brings forth the willingness to act on behalf of his own salvation.

Moreover, Austrian psychotherapist Alfried Langle (1992), successor of Viktor E. Frankl, a Viennese psychiatrist and "father" of logotherapy, defines fear in terms of existential analysis, extrapolating its mental and physical size. The author considers fear from a neurophysiologic point of view as "*a state of generalized excitation, which manifests itself psychologically, accompanied by a feeling of endangerment, to which man is existentially exposed and which leads to the perception of the (partial) unsheltered exposure of life*". [3]

For Kierkegaard (1960) fear can become the cause of human failure, for Gebsattel fear is a state *"of becoming"*. When it comes to fear, man seeks to consolidate stability, to anchor his protective elements in his existential reality. Man sees his presence in the world as threatened by destruction.[4] Its existence is in a tension field between potential "living" and "unliving", a condition through which man discovers a basic structure of existentiality, i.e. the possibility to fall off from the *"peak of existence"* into *"the abyss of non-existence"*, thus unable to be. The main signs of fear include: *muscle tension (especially facial tensions); palpitations; rapid shallow breathing; reduced control over one's behavior.*

Fear dimensions		
biological-mental	**socio-cultural**	**existential**
• natural, instinctive, animal fear reaction; • ARAS (*arousal reaction*); • fear emotion is possible in animals too.	• comparative behavioral studies regarding the occurrence of social fear; • endangering and threats in society (war, ecology); • specific cultural aspects.	• the state of being "thrown" in the world (*Heidegger*) • the state of being threatened • the fact of being alone with oneself • the possibility of failure (*Kierkegaard*) • the becoming block (*Gebsattel*) • the lack of meaning (*Frankl*) • the loss of stability

Table no. 1 Categorial description of fear occurrence (V. Frankl, 1982, 1983)

Reactions of acute shock were described by K. Kleist (1917) and called "*psychosis of terror" (Schrackpsychosen)*. In specialized literature there are also definitions such as emotional *shock, crisis reaction, acute affecting reaction, extreme situations*. In all these cases we are talking about a transient disorder of great severity, with upward endocrine and vasomotor changes in individuals without mental pathology, under extreme conditions.

According to Frankl's theory and his followers, fear comes from three genetic domains in evolutionary terms. It can be described as a result of physical and mental, socio-cultural and existential states of man's life in the world (table 1).

In the event of a security crisis, multiple systems are usually unbalanced and functional structures are shattered. Then, an array of factors come to condition fear: self-preservation reaction, fear of the unknown, difficulties in adapting to new conditions, lack of meaning, loss of stability etc.

[2] *Frica, între virtute şi patimă.* Consemnat Pr. Marius Corlean. Posted on February 1, 2013, 08:02. Available on http://luminaortodoxiei.com/ro/articole/articole/item/1387-frica,-%C3%AEntre-virtute-%C5%9Fi-patim%C4%83

[3] Längle Alfried. *Omul în căutarea stabilităţii. Analiza existențială a fricii* [Orig.: *Der Mensch auf der Suchenach Halt. Existenzanalyse der Angst*. / Existenzanalyse 2, 4-13, 1996] În: Analiză Existenţială, nr. 4,1, 2005, pp. 55-64.

[4] *Ibidem.*

The evolution of fear

Like other human emotions and feelings, fear is learned from prior experiences or induced thoughts, learned values and beliefs. Thus, if someone is bitten by a dog, one will avoid it forever, someone who suffered a serious road accident will hardly go behind the wheel, someone who got lost in the woods will not walk alone in the bushes, someone who survived an earthquake will refuse to enter the partially demolished apartment etc. The reason for all this is fear. Out of panic, terror, desire to flee, escape attempt, numbness or, conversely, out of agitation or aggressive behavior. At the same time self-control is weak or even extremely low, people are not fully aware of what they are doing and what is happening around them.

Triggering factors of fear:

• *External stimuli perceived as dangerous* – wild animals, insects, airplane flight, elevators, and heights.

• *An unsafe future* (personal – financial crisis, failure, loneliness, old age, disease, death; of large groups of people – terrorism, wars, accidents; of the planet – natural and environmental hazards, the apocalypse)

• *The anticipated perception of potential failure* – social rejection, public speaking.

It bears repeating that the first natural reaction someone has is fear in a dangerous situation. This is a natural emotional reaction to an imminent danger specific to any normal person and may be accompanied by physical sensations such as tremors, rapid breathing, and palpitations. Psychomotor reactions can be so intense that a sudden and very strong fear could bring about death, hence the idiom *"dead scared"* in reference to a big scare. The main task of the person in an emergency situation is to survive. The word survival is always used in reference to very serious conditions and is equivalent to *"protect oneself from death."* Survival means active, reasonable measures to preserve living, health, work and independent living conditions.

Any forced autonomy will force the person who denies it to make a decision based on his/her own safety and salvation[5]. The actions which are going to be carried out shall be focused on:

• surpassing fear and finding ways to resist stress;

• assistance and self-help in case of trauma and injury;

• getting one's bearing to find the rescuers' track and to find a way out;

• communicating and presenting warning signals to other people;

• saving, protection, water and food supply;

• building temporary shelters.

Fear is a state known to everybody; it becomes individual based on particular internal factors but also on objective characteristics of external threats; it manifests frequently and with varying degrees of intensity, some feel it more often or even permanently, others less. In everyday life, in extreme conditions, any person repeatedly gets over the dangers that threaten his/her existence and cause fright (fear) – an affective state that persists on short or long term, an emotional process generated by a real or an imaginary danger. Fear has various degrees such fright, horror, dismay, panic, anxiety, anguish, despair, which can occur with varying intensity and often in crescendo.

Fear forms:

• *Alarm, precaution* – the emotion of fear is combined with thoughts related to possible discomfort; the emotional intensity is reduced, but prolonged in time;

• *Anxiety, worry* – when dangerous stimuli are not present, but mentally anticipated and nevertheless perceived as if already occurring; the chance that the situations imagined appear in real life is considered very likely;

• *Panic* – fear from possible threatening situations, very intense;

• *Paranoia* – fear of somebody else's judgment; perceiving others as threatening.

• *Posttraumatic stress disorder (PTSD)* – occurs after a traumatic event, such as after an accident or an assault; the severe anxiety that arises quickly triggers stimuli similar to those of the incident, even if not involving the same level of threat.

Human behavioral reactions which occur suddenly and are caused by the emotion of fear - apparently inadequate reactions - can be considered normal physiological reactions because they contribute to the urgent mobilization of the necessary physical and mental states in order to self-preserve and survive. Once the first phase of fear and hard-

[5] M. Bebchuk, I. Kuznetsova. Acordarea primului ajutor în reacţii acute la stres. [Orig.: Оказание первой помощи при острых реакциях на стресс], disponibilă la: http://www.familyland.ru/students/educationmaterials/3k/stress/.

ship has been surpassed, the goal in actions appears and the motivation to get over the sense of inability, the control over one's behavior gets more established and logical saving decisions intervene. Otherwise various temporary mental disorders (reactive psychosis, hysterical psychosis, emotional reactions of shock) are formed, not to mention that a state of panic sets in. In the case of natural hazards, reactive mass psychosis and generalized panic is often observed.

If one knows how to act, the fear of exacerbating reaction activates the mind. Cognition mobilizes the system resources, seeking effective opportunities for defense and reduction of losses. This does not mean the situation will be surpassed unless there are possibilities available. If one is more sensitive to physical or mental pain, then fear can lead to stress. Stress is a state of imbalance and confusion that causes high tensions, and blockages, thoughts are stopped as well as the desire for action. Can one withdraw oneself from this state, just depending on the capacity and willingness to choose between different ways and means to act? Sometimes yes, other times one needs the help of a third party fulfilling the role of savior or middleman.

Septimius Chelcea, a renowned Romanian sociologist, mentions in a study that fear *"means precaution rather than cowardice and the opposite of fear is not courage, but rational calculation, lucid thinking. It came into this world together with man, in the mists of time. It is a negative emotion experienced with varying degrees of intensity, generated by danger, by an imminent threat, real or fictitious, which is intended to be avoided."*[6]The sociologist also points out the distinction made by Michel de Montaigne, the French writer, between polar manifestations of fear: *"It sometimes gives us wings to fly and other times it nails us down"*.

Fear produces certain undesirable behavioral reactions that can be absolutely opposed: one might paralyze or mobilize. These two ways of reaction can be differentiated at an individual level, but also at a group or social level. Passive reaction to fear is manifested by trying to escape, by blocking response reactions, stillness, inactivity, retreat and taking cover into unconsciousness. Active reaction leads to the mobilization of internal and external resource to overcome the terrifying situation, the counterattack or fleeing from danger. Fear is wrongly considered irrational behavior. On the contrary, it brings forth protection, preservation and survival reactions.

Social behavioral reactions caused by fear

Living and working conditions generate different human emotions, such as joy or sadness dignity or guilt, confidence or discouragement, courage or fear. In similar conditions, people from the same community display similar emotions. Emotional experiences extend from the individual to the group, then to larger groups, to masses of people reaching the nation or the population of a state. As I have mentioned above, positive or negative experiences in dealing with situations which upset the existential balance condition the acquisition of specific behavioral skills, and ultimately, reinforce success or failure in life. Corey Robin, professor of Political Science at Brooklyn College in New York, asserted in a paper published in 2004 at the prestigious Oxford University Press and recently translated into Romanian that *"if we want to measure fear in the American style, we must begin by looking at jobs, because this has always been a sensitive area for the population, which is in the grip of fear and coercion"*.

Biological mechanisms of fear essentially differ from the social ones. Mostly negative emotions, fear shared by a large number of people (groups, social classes, nations). At a social level, fear is conditioned by social, real or fictional imminent dangers. Turning fear from individual biological reactions, manifested at a physiological, behavioral, psychological level into social reaction occurs through interpersonal communication and mass media. The danger may arise from a political regime, a social and administrative institution, organizations or individuals with economic/political power, cultural constraints and or religious prohibitions, ecological or environmental factors. In this case the social nature of fear is important, but no more than that negative emotion transmitted from one individual to another, gradually including a significant number of people - from groups, local communities, professional collectives, social categories and classes, peoples and nations.

When addressing issues of human behavior in crisis situations, particular attention is paid to the state of fear. Human behavior suddenly developed in an extreme situation is largely determined by

[6] Chelcea, Septimiu, *Frica în România de ieri şi azi*, CURS Poll, in Jurnalul Naţional, on 06.10.2009.

fear, which to some extent can be considered a normal physiological response for it contributes to the physical and mental mobilizing in emergency conditions, a state which is necessary for developing self-defense and preservation mechanisms. Fear is an alarm, not only anxiety, but a call to action, a call for man's probable protective measures. Fear makes people feel discomfort – this is its negative effect; at the same time fear is the order of individual or collective defense as the main purpose of man is to stay alive, to prolong his existence - this is unquestionably its positive effect.

The same happens with nations fearful of threats from other countries. If there are effective tools to counter the threats, the peoples can display their independent defense strategy. Actually, disputes arise between big and small countries, strong and weak, central and peripheral from a geostrategic point of view. When there is an obvious gap between offensive and defensive effectives of the countries concerned, as between geographic, economic or political size etc. and the balance leans towards the "aggressor", vulnerable countries turn to neighbors and allies for support.

We must keep in mind that the history of a people and its relationship with other nations strengthen the nation traits and cultivate national virtues. These include inseparable cultural values such as courage and fortitude or cowardice and humiliation before the powerful. Those peoples which over centuries have fought for independence and resisted in front of other invading peoples, who unified territories and strengthened their borders and nation values, will resist more easily to contemporary geopolitical interference. On the other hand, peoples who have accepted under different historical periods to be led by others, to conform to the will of the strongest, will barely be able to maintain national dignity and impose national policy on the geopolitical stage.

Fear in Romanian history

It is interesting to notice how Romania evolved from a historical perspective and if the feeling of fear conditioned or not its historic turning points, and if this feeling led to specific learned behavior patterns and national values.

Over the centuries, Romanians went through numerous attempts of conquest, assimilation, disunion, division, unification and territorial reunification. The Roman expansion, the Ottoman Empire invasion, military alliances with Russia or the Austrian Empire – all the interference with other nations have taken their toll on the Romanians' nation consciousness. The choices made by the people and its leaders at a certain point in time led to the appropriation of certain behavioral characteristics. How did the feeling of fear influence Romanians, descendant of the Geto-Dacians, which lasted from the time of Burebista and Decebalus under the leadership of other nations, either as Roman province or later as an Ottoman province?

Roman civilization permeates all aspects of life in the occupied territory. Romanization leads to the substitution of the population's language with Latin. Moreover, Romanization factors were the army, the settlers, the urbanization, the government, the religion, the law and education in Latin. At that point in time we see that the Romans' expansionist behavior has positive effects on the invaded peoples. On the other hand, the locals' fear of something new and unknown turns into behavioral reactions of adaptation and modernization.

The Slavic invasion in the 7th century had negative effects for the Romans, discouraging repeated attempts of unification. In the Middle Ages, southern and western Romans were separated from the newly created states and reunification becomes virtually impossible because of Slavs, Bulgarians and Turks. In the XVIII century, the first two Romanian states, Moldova and Romanian Country, were vassals of the Ottoman Empire, but retained their internal autonomy. If we only mention the many battles waged by Stephen the Great, we will demonstrate the courage our brave soldiers have shown. Fear was overcome by confidence in the ruler and a desire to protect one's land and nation. The skill of the ruler as warrior confirms a good knowledge of the country, as well as the talent of knowing what the enemy was thinking. We find the famous tactics applied by Stephen the Great in the well-known paper "The Art of War", written by Chinese General Sun Tzu in the late 6th century BC.

At that time Transylvania was in turn part of Hungary, the Ottoman Empire and the Austro-Hungarian Empire, though it also had a wide autonomy. The Romanians, who were under the domination of other states, did not cower and did not abandon the idea of unification. Facing the fear of a new invasion, the two countries joined in 1859, along with Alexandru Ioan Cuza's double election as ruler.

The behavior of confronting foreign influences leads the Romanians to assimilate the territories inhabited by the same people. After the Treaty of Bucharest (1913) Southern Dobruja is obtained and after World War One Transylvania, Bucovina and Bessarabia are obtained, by applying the policy of "self-determination of nations". A part of the assimilated territories are lost over several decades (Northern Bukovina, Hertza County, Bessarabia, Southern Dobruja).Today they belong to our neighboring countries: Ukraine, Moldova and Bulgaria. It is worth noting that in spite of being overwhelmed and assimilated into Slavic and Bulgarian culture, Romanians in those territories largely preserved traditions and their native language.

The situation is different in Moldova, which is entirely a Romanian state, but was included in the Soviet Union. In order to secure the western border of the USSR, a vehement policy of denationalization of the Romanians was enforced on the left bank of the Prut. The area was heavily populated with native Russians and the local population was partially displaced in Siberia. The Moscow Central Committee annihilated Romanian by nicknaming it a "Moldavian language", by changing the Latin alphabet into the Cyrillic one, by supporting archaisms and regionalisms, by encouraging pronunciation with a Russian accent in the media etc. National identity was stifled for almost a century in many ways. Even the term "country" was avoided, opting for "republic" instead so as not to suggest the idea of reunification with Romania, the mother country.

Fear of mass persecution, of losing your job or even your life, determined the oppressed population to tacitly accept disgrace and the loss of national identity. The population's behavior adopted in response to the fear of social response was a passive one, of self-preservation and survival. A return to authentic values - a phenomenon that painstakingly continues today - began only after the implosion of the Soviet Empire. Conditionedby the frozen conflict in the Transnistrian autonomous area, officially unacknowledged, but controlled by Russians, Chisinau politicians had the courage to recognize Romanian as an official language only in 2013 and to replace the elusive collocation "mother tongue". A part of the population currently wants the union, some of them are pro-Russian, and another part is fearful or indecisive, waiting to see "where the wind will blow".

The political, economic, social and moral education, science and culture declined during the Communist regime in Romania. The frightening socialeventisthetotalitarianregimeitself.Economic, social, cultural, religious threats and especially political ones cause fear among the population, not to mention distrust, anxiety, discouragement and helplessness. Every manifestation of discontent or rebellion was immediately countered and punished harshly. The population was downright scared, frightened, paralyzed, as in the Romanian saying *"fear entered his bones."*

The poll conducted by CURS (2009)[7] highlights some features of national fear during Ceausescu's regime (1965-1989). People who lived under Ceausescu still remember how afraid they were of fellow party activists or informants, of Securitate, of Militia and of the regime in general. There was also a widespread mass fear of not becoming victims of crime, of not being humiliated, of difficult working conditions etc. The threats were particularly political, but there were fears of adverse economic events such as job loss. Given this background of socialist terror, few recall the devastation brought about by natural hazards (earthquakes, floods, droughts), particularly the 1977 earthquake which remained deeply rooted in their collective emotional memory.

At present, according to the survey, social fear triggers are especially economic (crisis, economic collapse, inflation, lack of jobs), while for 14-15% of the population social phenomena such as crime, corruption, street violence are imminent dangers. A smaller part of the population is scared of getting sick and of possible natural disasters.

In 2014, during my doctoral research, I conducted a survey with reference to the perceived risks, including social concerns. Fear arises when there are actual or probable risks and danger is perceived. After analyzing the results of the questionnaire applied to a sample of 130 people, I found the following risks and threats: poor health, inefficient education, crime and corruption, lack of jobs, poor infrastructure, low salaries and pensions, undeveloped industry and agriculture, insufficient housing, inadequate functioning of public institutions, unstable mentality and values, reduced culture. The greatest fear relates to the death of closed ones (62%), economic instability

[7] *Ibidem.*

in the country (42%) and the possibility of natural disasters (33%).

With reference to behaviors learned from negative experiences, almost half of respondents believe that subsequent negative events will affect them as much (44%) and only a quarter thinks it will affect them less (26%). This fearful attitude is because of not having faith in the authorities to solve issues efficiently and this is why disaster response is being rated rather poorly (57%). Nearly all respondents (96%) consider training programs for natural hazards useful and necessary and most Romanians (77%) want to be helped and guided by qualified staff if life and integrity were threatened.

In the absence of other resources, the behavior of people in emergency situations is guided by their own skills and abilities, most trying to find a solution themselves (49%) and/or to help themselves and others around (46%), only a small percentage (28%) analyzes the situation and calls for help, relatively few (9.4%) are those who admit they do not know what they should do and choose to imitate others. There is a tiny percentage of people who are ready to risk their lives to save others. Very few admit that in a tightrope situation they would be scared and would probablyparalyze or panic.

A question that deserves special treatment is Romania's relation with other countries and in particular, the fear of a "hot" war escalating close to its geographic area, encompassing our country. Given the armed conflict at the border of south-eastern Ukraine, the frozen conflict in Moldova's Transnistrian separatist territory and given Russia's current expansionist and aggressive policy, it is only logical to address such questions. We cannot overlook NATO's protection and the anti-missile shield installation here, which enhances the confidence of the population that may need to be protected in the future. Observing the behavior of the Romanians at the moment and the messages in the national/international media, we can deduce that the Romanian people regard geopolitical events in the area with a certain fear, but not fright. The population does not exhibit fear behavior adaptation at the moment.

Conclusions

Fear is a feeling with a more negative connotation, but which helps the individual to mobilize and defend in the face of danger. The same goes for social fear, at the level of peoples or nations. We see that social fear is learned just like the biological one. Negative experiences add overvalued emotional experiences in similar situations. When danger is not well perceived, the sense of fear is present only as anxiety or worry, the individual or society rather choosing to wait. If the threat (real or probable) is perceived intensely, the physiological and social effects will be more intense, too, be them active or passive defense or general paralysis. When there are helping factors (such as a stronger person you can rely on, in case of individual fear or confidence in the authorities, leaders and the defensive power of the state in the case of social fear) adverse behavioral reactions to fear are diminished, confidence increases and conduct is guided more towards constructive measures to save oneself.

The study on the risks in Romanian society shows numerous social, economic, cultural and environmental problems. Many of them are dormant and have been happening for several years and may be gradually reduced through efficient state policies aimed at economic, societal and valuable recovery. High lighting mental and behavioral characteristics of Romanians will help to prepare the population to cope with potential disturbing social events causing mass fear. Informing the general public about events taking place in society and geopolitics, as well as cultivating proactive behavior among the population, could diminish the degree of social fear manifested in Romania in relation to the socio-political-economic phenomena in our country and beyond.

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CONDUCTING ANTIBALLISTIC MISSIONS WITHIN THE JOINT FORCE

Colonel Leopold Cerassel LUNGU, PhD candidate,

Abstract: *The deployment of antiballistic operations within a joint force operational group is necessary for the air defense and the missile device operative elements of this group.*
The units (subunits) of ballistic missile will combat and destroy ballistic missiles launched by the enemy in all their stages, their immediate objective being to defend important targets with the antiballistic means of the operational group joint forces.

Keywords: *Force missile defense of the operational group of joint force; Ballistic and cruise missiles; air defense and ballistic characteristics executed by units (subunits) of antiaircraft missiles; ballistic and cruise missiles.*

Within the operations conducted by multinational joint forces, ballistic missile units (subunits) will destroy ballistic and cruise missiles in all their flight stages if launched against the structures defended by the antiballistic component of the joint force (command and control system, groups of forces, logistic sectors).

Combat characteristics of antiaircraft, antiballistic and cruise missile units[1]:

- Great firing efficiency with antiballistic and cruise missiles directed against ballistic and cruise missiles. This efficiency is caused by the guiding precision at the target (active and semi-active guidance) and the powerful warheads that equip the antiballistic missiles;
- Great ability to counteract and destroy ballistic and cruise missiles of any type, at any height, distance, velocity, both day and night and under any weather conditions;
- Ability to counteract ballistic and cruise missiles even when the adversary uses any type of electronic jamming from all the media (terrestrial, aerial or naval).
- Possibility to fire against ballistic missiles that split in more aerial targets (6-12 ballistic missiles), when they are close to the objectives that will be hit by air power.

Organizing air defense and antiballistic forces

I consider that for the integrated antiballistic defense of a joint force, the antiballistic defense forces should have the following combat formation:

- 1-2 battalions equipped with long-range antiballistic and antiaircraft THAAD missiles;
- 3-4 battalions equipped with long-range antiballistic and antiaircraft PATRIOT and ARROW-2 missiles;
- 4-6 battalions equipped with medium-range antiballistic and antiaircraft EUROSAM,
- MIM 120 NASAMS or HAWK-SL-AMRAAM missiles;
- 6-7 battalions equipped with short-range antiballistic and antiaircraft RAPIER, ROLAND, CHAPRAL or SPADA missiles

Antiballistic and air defense of the joint force as well as other important objectives[2]

For the protection of the joint force and according to the number and technical features of antiballistic and air defense systems of aerial targets (ballistic and cruise missiles), which could

[1] Ion, Puricel, *Combaterea rachetelor balistice cu rachete antiaeriene în operaţii multinaţionale*, Editura Universităţii Naţionale de Apărare „Carol I", 2007, pp. 82-83.

[2] Manualul de tactica apărării antiaeriene a trupelor de uscat, partea a doua, Apărarea antiaeriană a armatei de arme întrunite şi a corpului de armată, Bucureşti – 1977, pp. 41-44.

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be launched towards the adversary, I consider that it is important for the antiballistic defense forces to adopt the following defense systems:

- **Area defense system** I consider that this type of system will be organized when we have sufficient air and antiballistic defense forces and the possibility to have a continuous area where the enemy ballistic and cruise missiles are destroyed. It is necessary that this type of system be adopted when the elements of the operational system of the joint force and other important objectives are arranged at intervals and large distances one towards the other. In this case, I consider that the area defense system should be unfolded on three air defense lines, composed of air defense and antiballistic battalions, that will position themselves parallel to the most probable attack line of the enemy ballistic missiles. The air defense alignments are arranged as follows:
- The first air and antiballistic defense line will be arranged at a distance of 30-40 kilometers off the enemy lines (or seashore) and will be composed of battalions with medium-range antiballistic missiles, organized on batteries and linear combat systems;.
- The second air and antiballistic defense alignment will be arranged at a distance of 80-100 kilometers off the first line of defense and will be composed of battalions with long-range antiballistic missiles, organized on batteries and linear combat systems as well as battalions with short-range antiballistic missiles, which will aligned on batteries, in circular combat systems around the objectives that are protected;
- The third air and antiballistic defense line will be arranged at a distance of 150-250 kilometers off the second defense line and will be composed of battalions with very long-range antiballistic missiles, organized on batteries and linear combat systems;
- **Circular defense system dispozitiv de luptă circular.** I consider that this type of system will be used when we do not have sufficient air and antiballistic defense forces and the possibility to have a continuous area where the enemy ballistic and cruise missiles are destroyed over the whole operational area of the joint force. It is thus necessary that this type of system be adopted when the elements of the operational system of the joint force and other important objectives are arranged at small and medium intervals one towards the other. In this case, I consider that the area defense system should be unfolded on *defense systems and targets* that need to be protected by the antiballistic forces.

In this case, air and antiballistic defense will be composed of air defense, antiballistic and anti-cruise missile battalions, which will be disposed in a belt-shaped formation around the targets/groups of targets.

- **Circular systems on groups of targets** I consider that this circular defense system on groups of targets will form a circular, continuous, and efficient zone to counteract enemy's ballistic and cruise missiles around and above the area covered by friendly troops.

Air and antiballistic defense will be performed by using the circular effective position of the antiballistic defense battalions on the following two defense concentric circles:

- The first circle will contain the long and medium-range antiballistic missile battalions. It is necessary that the circular defense systems of long and medium-range antiballistic missile battalions be arranged in a circular manner on batteries at a distance of 30-40 km. away from the enemy lines (or sea shore).
- The second circle will contain the long-range antiballistic missile battalions as well as short-range antiballistic missile battalions. It is important that the circular defense systems of long-range antiballistic missile battalions be arranged in a circular manner on batteries at a distance of 60-80 km. away from the first defense circle. Short-range antiballistic missile battalions will be arranged on batteries in a linear manner so that they will cover a larger area to be protected against ballistic missiles.

- **Circular target-based defense system** I consider that this circular target-based defense system on groups of targets will form a circular, continuous, and efficient zone to counteract enemy's ballistic and cruise missiles around and above the main elements of the operative system of joint forces and above the most important objectives of joint forces. Air and antiballistic defense will be performed by using the circular effective position of the antiballistic defense battalions on the following two air defense concentric circles:

- The first circle will contain the long and medium-range antiballistic missile battalions. It is necessary that the circular defense systems of long

and medium-range antiballistic missile battalions be arranged in a circular manner on batteries at a distance of 30-120 km. away from the enemy lines (or sea shore).

- The second circle will contain the long-range antiballistic missile battalions as well as short-range antiballistic missile battalions. For their efficient use, it is necessary that the circular defense systems of long-range antiballistic missile battalions be arranged in a circular manner on batteries at a distance of 5-10 km. away from these objectives. For each air defense and antiballistic missiles sub-unit, it is necessary to establish a main launching installation and 2-3 secondary installations. The site of the additional installations will be decided upon by the commanders of antiaircraft and antiballistic missiles units, at a sufficient distance towards the main launch pad so that they will not be hit and damaged by the enemy from air, ground, or sea.

The largest interval between the launching positions of two neighboring antiballistic missile subunits should ensure that the firing link between them should be of 1-2 maximum firing parameters, respectively 10-25 km, for the short-range antiballistic missiles, 25-34 km for the medium-range antiballistic missile, 40-60 km for the long-range antiballistic missiles, and 350-450 km for the very long-range antiballistic missiles. In certain cases, the interval between the antiballistic missiles units can be smaller (maximum 1/3 of the firing distance).

I consider that the minimal distance between antiballistic missiles units is determined by the following situations:

- The need to exclude the possibility to hit organic antiballistic units by the jet engine of the first stage (cruise engine);
- The need to exclude the possibility to jam neighboring antiballistic units in using the radar stations;
- The need to exclude the possibility to simultaneously destroy two antiballistic units through the strikes of air, land, sea enemy;
- The need to concentrate the effort of antiballistic units on a more important direction of attack.

It is also necessary that all the combat systems of antiballistic units be placed as far as possible from the enemy line or the sea shore so that they will be beyond the firing range of the enemy's artillery or ground to ground/ship to ground missiles and avoid being neutralized, annihilated or captured by the enemy forces.

When the commanders of antiballistic missiles choose the combat systems, they should take into account the following:

- Possibility to obtain optimal concealment with natural means against aerial, terrestrial or naval reconnaissance of the adversary;
- Possibility to obtain more precise launch of antiballistic missiles within their technical limitations;
- Possibility to easily occupy and evacuate these combat systems;
- Possibility to supply them in an effective manner with antiballistic and cruise missiles as well as to ensure their handling and storage in safe conditions;
- Possibility to create communication and information connections;
- Possibility to obtain optimal function of automated radar and command technology;
- Possibility to conduct topographical and tactical reconnaissance;
- Possibility to replenish with materials as part of logistic support;
- Possibility to park and conceal means of transport;
- Possibility to install and conceal the camp for the military personnel.

Moving the elements of antiballistic unit's combat systems for the purpose of ensuring the continuity air and antiballistic defense of the joint force will be conducted *successively or simultaneously*[3].

Movement (regrouping) in successive (alternate bounds) waves will be conducted when the antiballistic units will take action independently for antiballistic air protection forces (targets) which conduct offensive or defensive actions.

This successive movement (regrouping) should be conducted in a timely manner in accordance with the mobility of the antiballistic systems.

I consider that the most effective process of successive (alternate bounds) movement is represented by the antiballistic units moving half of its troops, followed by the other half after the first has already occupied its new firing positions.

[3] Manualul de tactica apărării antiaeriene a trupelor de uscat, partea a doua, Apărarea antiaeriană a armatei de arme întrunite și a corpului de armată, București – 1977, pp. 45-46.

Similarly, the command and control system of antiballistic units will conduct successive movement when the technical possibilities of automated command devices are about to be outpaced because of the distance to the first half of the antiballistic unit. All logistic units will execute the successive movement in accordance with the antiballistic units.

Simultaneous movement will be totally conducted by the antiballistic units in the following situations:

- When antiballistic defense is performed for important objectives that change their place further from their initial positions;
- When the antiballistic units are about to move to another line or from one line of defense to another.

Force maneuver[4] will be performed both along the line of contact with the enemy (along the sea shore), at a safe distance, and in the depth of the joint force formation so that the effect of antiballistic defense will be changed. I consider that force maneuver should be according to the changes that appear in the in the importance of the protected targets for the interdiction of possible direction of attacks and for re-supplying the antiballistic units in case of losses caused by the air, land (sea) enemy.

Following the decision of the joint force commander related to the importance of certain objectives, the commander of the air component commander will order the force maneuver for strengthening their air and antiballistic defense component.

Antiballistic units which are about to execute force maneuver will be decided upon by the air component commander based on the suggestions made by his joint staff after the analysis of the new tactical situation.

Maneuver of fire[5] will be performed by the concentration, repartition and transportation of antiballistic missiles conducted by antiballistic units against enemy ballistic missiles, which will allow the supply with the necessary number of antiballistic missiles that correspond to the desired annihilation effect.

Maneuver of fire will be executed at the order of antiballistic unit commanders that perform the antiballistic missile defense of the important targets within the perimeter.

Requirements of antiballistic missile systems:

- Using the full power of the technical combat means at disposal in order to counteract and destroy most of the enemy's ballistic missiles;
- Using the possibility to counteract and destroy enemy ballistic missiles at all heights and directions, according to the established missions;
- Obtaining minimal vulnerability of combat systems of antiballistic systems when confronted with strikes coming from the air, land/sea adversary;
- Getting protection against electronic jamming of antiballistic systems;
- Executing maneuvers under the fire of the air, land/sea enemy; efficiently executing the maneuver of fire and the troop maneuver.

Launching antiballistic missiles[6] will be conducted taking into account the procedures of the air enemy, the number of ballistic missiles launched by the enemy, the directions, the altitude, the time between the flights, as well as the enemy's use of jamming and anti-radar missiles.

The commander of antiballistic units will make decisions regarding the number of antiballistic missiles that will be launched while the missile launch control officers within the antiballistic unit will decide upon the application of procedures to counteract and destroy enemy ballistic missiles.

Conclusions

The main military conflicts after WWII and especially the Golf War have stressed the importance of air attack, conducted with the aviation or ballistic missiles, as well as the crucial role of air and antiballistic defense without which no air, land or sea operation could be conducted nowadays.

As a consequence of the important role played by antiballistic defense systems, their number and quality have continuously increased. They are

[4] Manualul de tactica apărării antiaeriene a trupelor de uscat, partea a doua, Apărarea antiaeriană a armatei de arme întrunite și a corpului de armată, București, 1977, pp. 16-17; 37-39.

[5] Manualul de tactica apărării antiaeriene a trupelor de uscat, partea a doua, Apărarea antiaeriană a armatei de arme întrunite și a corpului de armată, București, 1977, p. 17.

[6] Ion, Puricel, *Combaterea rachetelor balistice cu rachete antiaeriene în operații multinaționale*, Editura Universității Naționale de Apărare „Carol I", București, 2007, pp. 224-226.

characterized by increased fire power, high combat efficiency, long time for exploitation, superior technical parameters (speed, range, altitude, protection against jamming, and multiple guiding options), features that enable them to fulfill air and antiballistic defense missions.

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CONTEMPORARY SECURITY ENVIRONMENT AND ITS SPECIFIC FEATURES IN THE AREA OF INTEREST OF ROMANIA

Colonel lecturer Alexandru STOICA, PhD

Abstract: *This article is a brief analysis of the main features of the current international security environment, which is already marked by powerful geopolitical and geostrategic transformations. The international security environment is experiencing a significant deterioration, mainly caused by the amplification of the conventional threats and risks, as well as by the hybrid ones.*

In my analysis I am also referring to the main features of the security environment specific to the Romania's area of interest and to the strategic opportunities for our country.

Keywords: *security; security environment; interests; security interests; risks; threats; vulnerabilities.*

Preamble

The followers of the realistic current of the theory of international relations show that the primary reason of the states' existence is the one to exercise their power. They say that power gives states the opportunity to protect and promote their interests, to obtain success in situations of negotiation and to shape or influence the governing rules of the international system. They tend to see power as a political phenomenon, evidenced by the highlighting limitation of an actor's capacity, on the political scene, to persuade another actor to do what it normally wouldn't do without this intervention. Therefore, politics is seen as the exercising of influence aimed to control and dominate others. Understanding power as an instrument of control, it is only reasonable to wonder who is the most powerful and who is the weakest and to find out who will fulfill its interests and who would have to make concessions[1].

History has demonstrated and has showed us countless times that source of power has always been given by the disparities between states. To talk about rights has a meaning only between equals. Unequally, the right of the strongest and the laws of power only put the powerful one into the most favorable positions. It is precisely these laws that govern the relations between states since the dawn of the state system, because inequalities regarding territory, population, material and spiritual development, natural resources[2] have been created between states, which cause that type of power without material expression and which cannot be quantified, being noticeable and visible anywhere, at any time within the global security architecture.

On the other hand, the force that generates the states' power consists of numerous quantitative components, measurable using statistics and mathematical methods, and also qualitative elements which can only be estimated. These qualitative and quantitative elements shape up what we can call *the power potential*, in other words, that possibility for the states to impose their will and their interests in the international system.

The contemporary security environment - features

Judging by the multiple power manifestations of the states, the international system is currently in full effervescence, with numerous crises and conflicts. Regarding the conflicts, it is simply

[1] Teodor Frunzeti, *Geostrategie*, Army Tehnic-Editorial Center Publishing House, Bucharest, 2009, p. 42.

[2] Corneliu Bogdan, Eugen Preda, *Sferele de influenţă*, Scientific and Enciclopedic Publishing House, Bucharest, 1986, pp. 16-17.

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enough to point out to what is currently happening in Ukraine, in Syria and in Iraq (the aggressive actions of the Islamic State), and regarding the crises, we can only think about the Middle East or the South China Sea area.

Today, at global level, we are in a period full of dynamism, uncertainties and controversies, in which human conflictuality may result in a systemic crisis, also enhanced by the lack of will of the great powers to find a solution for the international relations system after the end of bipolarity and the United States of America failure in adjusting the operating mechanisms of the world as a single hegemon.

In contemporary politology it is considered that these crises and conflicts, frequent in the past few years, have a massive impact on the international relations and that they will determine the changing of the international order.

The current security environment is the result of the major changes at the end of the XX century and at the beginning of the XXI century: the disintegration of the USSR and the disappearance of the bipolar system, the fall of communism and of the Iron Curtain, the extension to the east of the European and Euro-Atlantic organizations and, last but not least, the imposition of the US as unique hegemon.

On the other hand, the unique hegemon status of the US is on its way down, under the circumstances in which the United States no longer have the force required to solve the major problems faced by the whole world, while their contenders are more and more visible, desiring to impose a multipolar system for ruling the world.

As a whole, the multipolarity flag remains enthusiastically raised by the most of those who take part in the debate on foreign affairs. The formula in itself has become a figure of speech, automatically adopted by everyone. Multipolarity seems to be an almost absolute asset, but no one seems to take into account the contradictions and challenges which it involves.

It is often emphasized that, in fact, unipolarity is nothing but a myth or even an illusion, and the changing of the current international system is inevitable. This idea starts from the fact that despite their power the United States are no longer able to manage problems at the global level without the massive involvement of other important actors. Furthermore, the trends of economic growth can be used to estimate a relative strengthening of the competitors of the USA, which increases their influence to counter that of the Americans.

The dichotomy "unipolarity versus multipolarity" is nowadays more like a typical feature of the Russian rhetoric on foreign affairs which may be compared, taking into account a trademark analogy, to a well-sold consumer product, especially in academic circles and less in the political - military ones of the great powers of the world. An analysis on a higher intellectual level would use slightly different concepts to capture the special features of the contemporary world and of its international political agenda. At this level, questions gain depth, which means that the answers to them will not come easy in these times of systemic crisis, which can be labeled as a return to the one that took place during the Cold War, if not even more serious.

The future could replace multipolarity with a new bipolarity, whose key actors would be the United States and the People's Republic of China. Optimistically looking at things, Russia would have such an opportunity to play a decisive role in helping to maintain the equilibrium between these two actors, which would determine them to consider it as a partner of primary importance. Pessimists are concluding that Russia would have no choice but to accept the task of a less important partner of one or another of poles.

The complexity of the contemporary security environment is given by mutual interconnection and influencing of a number of phenomena with a disturbing character on the states' and individuals security. This is a fundamental feature of the current security environment, taking into account that threats, until recently considered classics, have increased their efficiency by making complex connections with asymmetrical phenomena/events or with unconventional ones. For instance, the terrorism threat is patented by the expansion of religious extremism, especially in states in which their national governments have failed in the attempt to control the population on their whole territory. On the background of the security vacuum created by the lack of state control, organized crime has flourished, exporting insecurity to adjacent or remote areas.

In the current context, a significant deterioration occurred in the international security environment,

mainly caused by the amplification of the conventional and hybrid threats and risks. The phenomena of major intensification of the existing crisis are considered to be sources of major danger, of possible outbreak of frozen or latent conflicts and the recourse to military means, in order to promote national interests. All these represent major challenges to the international community and to its ability to efficiently administer political crises with the diplomatic, military and economic means at its disposal.

The tendency of overlapping traditional forms of risks and threats (generated by conventional military confrontations, terrorism, organized crime, the proliferation of weapons of mass destruction) with new forms (cybernetic attacks) is more and more accentuated, potentiated by the scientific and technical progress and by the effects of generalized use of IT&C in the modern society.

At the same time, the restructuring of the international relations system is based on the expression of some political, economic and military developments that constitute themselves as the dominant of the contemporary security situation:

- the increase of the relevance of some new major state players at global level - countries which are part of the BRICS forum for cooperation and dialog;

- divergent manifestations of some European states and trends of their dissociation in approaching major problems at the European Union level (example: crisis in Greece);

- the current context, in which the Russian Federation has made recourse to the use of means of force for supporting geopolitical interests at global level, with major effects at regional level, changes the paradigm of Euro-Atlantic security constituting the main challenge to the allies and, at the same time, a fast conversion requirement of NATO, in order to adapt to the new realities.

- the enhance of the terrorist phenomenon on the background of geopolitical instability in the MENA area; the unprecedented rise of terrorist groups with claims to state organization (the Islamic State of Iraq and Levant - ISIL);

- the increase of immigration flows from the conflict areas to the states of Europe and the intensification of this problem for developed countries in Europe;

- the existence of frozen conflicts with potential of reactivation and export of instability.

Features of the security environment in Romania's area of interest

By carefully analyzing everything that happened within the international system in the past few years and the moves of the world's major powers on "the great chessboard", it appears that Russia, through its movements, surprised, at some extent, the West, which seemed not ready for that. But it is more unlikely to witness today a strategic surprise, as we witnessed during the Cold War. On the other hand, is Russia really ready, despite its plans, to be the banner of the world changing or is it just a "joker" in the "king's" hand, pursuing the harvesting of fruits? Does it have the required skills to carry out what it has started or it will collapse under its own weakness, letting the silent ones take advantage out of this? Future generations will have the opportunity to find the answers to these questions, as today's world has become extremely unpredictable.

The challenges generated, in the last period, by the Russian Federation question a major feature of the current security environment, until recently fully accepted by analysts in the field, the one represented by the lack of a major conflict between the main powers of the contemporary world. The intervention of the Russian Federation in Ukraine and Moscow's use of military operations for the purpose of a wide force demonstration, in order to show it has enough power to successfully make use of the force of weapons in order to preserve its interests, make us re-evaluate the possibility of occurrence of a major global confrontation.

The new developments in the Extended Black Sea Area emphasize important transnational and global threats, representing the main challenge for the allies and, at the same time, a requirement for fast and deep transformation of the security structures of the states in the eastern flank of the Alliance in order to reduce vulnerabilities and to protect themselves against the hybrid threat that has occurred in the new context. Thus, we can say that, in the Extended Black Sea Area, two main types of threats to the European continent are currently articulated: the Russian Federation actions for recovering its status of a big power and the extremist actions potentiated by the emergent Islamic radicalism.

The Russian Federation is aggressively building and affirming its national security objectives,

having to resist the attempts by some actors of international environment to counteract its plans of transformation into a global power, whose actions to be directed toward the maintaining of strategic stability and of the mutually beneficial partnership relations, in a multipolar world, to keep them from fulfilling its national interests, of weakening its positions in Europe, Middle East, Transcaucasia, Central Asia, as well as into the Asia-Pacific region. Practically, we are witnessing and, unfortunately, just watching a complex game, with many important actors, multiple interests and variables, some of them not at all predictable.

In order to achieve its objectives, the Russian Federation has taken several measures ever since the beginning of the 90s such as: reinforcing the economic and political domination over an area that came out under its influence after the fall of USSR by the creation of a counterbalance to the advantages of European integration: Russia, Belarus and Kazakhstan have signed the Agreement for the Establishment of the Eurasian Economic Union; the penetration of western economies with oligarchs created by the "national will", to whom clear assignments were established; the quick volume increase of foreign investments through companies and banks with Russian capital; the attraction of Western capital to the Russian market and its representatives transformation in pressure groups against Western governments prepared to take diplomatic measures or even sanctions against Russia; the developing of energy dependency of the European Union economy of the resources originating in Russia; the creation of some zonal and European Union tensions; the development of "economic race horses" with global vocation, prepared to influence economic policies at international level, and with skills of generating (at order) sectoral crisis with negative implications on western economies: Rosneft, Gazprom, Lukoil (the events in Romania which had into attention problems in the middle of the Lukoil company would be expected to take into account a reconsideration of economic construction in our country, especially of the activity in the energy sector, where a strong vulnerability in the past twenty-five years has been developed); the attraction of China in the "energy trap" by strengthening the partnership with it, in important issues of global policy, but also in economic ones. Chinese economy has a chronic deficit of energy and will pretty much depend on deliveries of Russian natural gas.

The Euro-Atlantic countries are becoming more and more worried about the Russian military potential, which would jeopardize safety, but, at the same time, Europe is dependent on the energy resources of Russia, and the energy policy of the latter is still extending geographically through the launching of new energy projects, the South Stream, North Stream and Blue Stream.

The new geopolitical realities are imposing to Moscow several aspects on which the Kremlin leaders do not agree. These include issues related to installing of the American antimissile shield on the European territory (some of its components will be installed in Romania, at Deveselu), the American military bases on the Black Sea in Bulgaria and Romania, the pro-West orientation of Georgia and Ukraine and the increasing influence of the United States in the Caucasus area. It is expected that, in the near future, the Russian Federation will try the destabilization of the Baltic Countries and Moldavia, with the contribution of the Russian ethnic population, after the model patented in Ukraine.

A lack of real cooperation between the United States and the European Union, on the one hand, and the Russian Federation, on the other hand, for the purpose of seeking solutions to solve the Ukrainian problem may lead, in several specialists' opinion, to a new arms race, which seems to be more and more likely, in accordance with the conditions in which Russia is developing programmes for weapons and technologies of the fifth and even sixth generation. It is to be expected that, together with this eventual arms race, a new Cold War between the West and Russia might appear. It is obvious that the great powers will be those to take advantage of it, and the smaller countries would be the ones to take the "blame".

Referring to interests, Russia has its own interests in the former Soviet republics, in Asia, as well as in the Muslim and Arab world, in the economic, commercial and security fields. Its ambition of being a great power determines it to strengthen its positions in these regions.

It does not leave and does not turn its back to the West for that it is needed, but, in exchange, it takes advantage of the weakening of the American positions, in order to strengthen its own. The current tensions in Russia's relations with western countries strengthen in the Kremlin leaders the idea

to redirect to Asia (see contacts undertaken lately by Russia with countries of this area of the world, such as: China, Turkey and India, with converging interests in certain economic and military sectors) and, in a lesser extent, to the Muslim and Arab world as alternatives for it. Its multiple initiatives did not have the expected results. As for the speech on its contribution to the dialog between civilizations, its credibility is greatly reduced by the fact that it does not appear in the big current files as a credible security supplier, the proven brutality in Chechnya, the Georgia folder, Ukrainian folder, the Transnistrian one and the annexation of Crimea.

At the level of strategic interests, Russia is considering a change in the situation of the Heartland, by the strategic re-organizing of all spaces surrounding the country, in order to have direct access to vital geographical objectives, especially to ports, warm seas and resources. It is also taken into account the decrease of American influence in these areas, the prevention of construction of American military bases in these territories and the prevention of integration in NATO of some of the countries which were once part of USSR and who have expressed their desire to embrace Euro-Atlantic values (Ukraine, Georgia and Moldavia).

Economic constraints and the sanctions imposed by the Euro-Atlantic community weigh much on the ambition Russian leaders. These make Russia not a great self-sufficient power, with a weight in the world, but a mid-range power, which needs the outer world to diversify and modernize its economy and whose interest is to establish international positions relying on reliable partners. What is happening in Russia, as a consequence of the measures taken by the West against it in cases like Crimea and Ukraine, could make the Russian President Vladimir Putin modify the current trajectory, but the internal support, which he still has, is helping him to maintain his position. Regarding the problem of the Republic of Moldova and its integration into Romania, it is stated the idea that *as long as the Romanian state is a NATO member and it is a part of the "sanitary belt", built by atlantists against Heartland, such integration will not be possible, as it brings prejudice to Russia's strategic interests*[3]. Practically, Russia acts to neutralize the integration of Moldova in Romania using multiple means. Parliamentary elections at the end of November 2014 have shown massive Moscow support for the political pro-Russian groups on the left bank of the Prut River.

Is it only ideal, or may it be a reality as well, that Romania expresses and makes viable its security interests in a geopolitical environment near or beyond its national borders, an environment of interests for NATO, for the United States, the Russian Federation, the European Union, Turkey and the People's Republic of China? The answer may be affirmative, but to do this, what we call 'national will' has to behave in such a way as to be possible to build an Intermarium zone of stability, peace and prosperity, an area in which Romania to become a major player.

Conclusions

As much as the symptoms of the factors forming the security environment have a higher degree of interconnectivity, its complexity increases, causing the main security challenge of the contemporary world.

The strategic opportunities which Romania has at its disposal in order to make viable its interests in the geopolitical environments where it manifests, may be: to promote and encourage regional cooperation; re-updating the dialog concerning the NATO/EU strategy on the Extended Black Sea Area; to promote the country's interests in the decision-making processes of the North Atlantic Alliance in respect of the present challenges of regional security environment; participation to the conceptual and operational development of policy of common security and defense of the EU; development of strategic partnerships; involvement in the process of deployment and development of NATO and EU policies in the Balkan area, in Caucasus, in Central Asia and in the Middle East; development of some energy projects of both European and even global interest in the Extended Black Sea Area; involvement in consolidation of interests of the states in the Black Sea area in the development of some regional security mechanisms and support in the field of reform of security; defining and explicit assumption of strategic objectives of the national security on the segment of its military operationalization and affirmation.

[3] Aleksandr Dughin, *Teoria lumii multipolare. Compendiu*, translation and foreword by Iurie Roşca, Popular University, Chişinău, 2014, p. 193.

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