

## ASPECTS OF THE PARTICULARITY OF MILITARY ORGANIZATIONS

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**Abstract:** *In recent decades, significant progress has been made in an interdisciplinary field of knowledge - theory of organizations. The rapid change in theoretical domain allows looking at military organizations from a systematic point of view. Belonging to a particular type of organizations – "artificial organizations", the military systems poses some specific trends. In this context the paper explores the particularity of military organizations formulating recommendation on their management and development. As a general methodology the paper applies the systematic approach. Additionally the paper describes some modern phenomena in the organizational theory: fractality, homotopy and heteroarchy. As a whole the paper sticks to the abstract border between the rational and the irrational, between hypothesis and knowledge.*

**Key words:** *military organizations, military systems, fractal structures, management*

### 1. INTRODUCTION

Following the development of knowledge in the fifties of the twentieth century, a new scientific discipline Systems Theory emerged. The new "system" approach to solving research problems appears as a counterpoint and a complement to the traditional for that time "analytical" Newtonian approach. After rapid development this theory entered widely in the field of human practice and currently is used in biology, sociology, economics and management. Often accused for being conservative, the area of activity of the armed forces was no exception and enriched the theory and practice with categories and methods borrowed from systems theory. Unfortunately, instead of "bringing new perspectives", in most cases, it simply provides "a new vocabulary for old ideas." Everything in the Armed Forces is now a "system". This statement is correct as a whole, but this is the basic step of the systematic approach. The next, more important, step is to understand that the systems behave like systems.

The paper demonstrates some aspects of the systemic approach. The thesis is that the systemic approach can contribute to the better perception of some problems from the practice of the armed forces.

The aim is to reveal the specifics of management and in particular - planning of particular type of organizational systems - military organizations.

### 2. MILITARY SYSTEMS AS ORGANIZATIONS

The word system appeared in ancient Greece about 2000 years ago and means combination, body structure, organization, order, Union. In ancient philosophy the term system characterized integrity of natural objects.

Currently, we can distinguish four groups of definitions for a system. The first group defines systems as "an investigator-selected arbitrary set of objects and properties." The second focuses on the definition of the "purposeful activity" of the system. The third group is based on an understanding of the system as a "set of elements connected to each other." The fourth group gives the broadest definition of system: "a set of interacting elements." Let us take into consideration the last definition given by L. Bertalanffy.

We can classify systems in many ways. As to its origin, the systems are artificial and natural.

The brief characterization of the natural systems suggests that they emerge as a result of the interaction among the components. That is why they have variable composition, which means that they are open systems. The composition and the motivation are determined by the nature of the interaction, which influences the overall functioning of the system. It is difficult for this reason to define a goal of the system. In rare cases when this is possible, it happens on the background of spontaneous self-organization of the components in particular situation. Typical examples are flocks herbivorous mammals in African savannas, in which different species compensate the limited abilities of their senses. In this case we observe the emergence of a subsystem, united by the common goal of increasing the security of the individual. This goal,

however, is unable to maintain the existence of a subsystem for a long period - in the beginning of the migration periods the compositions of different flocks are broken. On this base when searching for a global goal we can find in the natural systems leading motives, based on the aspiration for survival and reproduction. It can be concluded that in natural systems the composition is primary. Led by personal motives, the components interact, giving rise to the relations in the system. These relationships determine the further functioning of the system. On this basis, it is difficult to define a global goal, and where possible, it can generally be defined as an increase the adaptiveness of the components to the conditions of existence.

Just by contrast, artificial systems are dominated by the purpose of functioning. The choice of the global goal is primary. For the goal implementation they perform a system of objectives (goal strategy). A common practice is to have a number of alternative goals and related strategies. For the implementation of objectives the system structure is build, including composition, relations and connections between components.

The military systems are typical artificial systems. They are established to perform particular goals in the security area. Actually the "systemic" problems of the armed forces begin here.

History of the emergence of the state and nature of the processes taking place in it indicate a strong analogy with natural systems. The armed forces - an artificial system, is create for protection of a range of collective (state) interests. Interests change and the Armed Forces change, but their tasks, composition and organization are always focused on achieving a specific goal.

Problem № 1: a change of the goal of functioning of an artificial system requires changes in its structure. Is there a problem? Yes there is! There is no military forum that does not start with "recent changes in the security environment "occurred "after the end of bipolarity," which generally consist of the "change of emphasis from armed confrontation to preventive activities ". The problem is that the tool for preventive crisis management is the same that solved problems during the famous "Cold War." The results vividly show that something is wrong. Glittering military success during the crisis in Kosovo and Iraq resulted in the first case to politically unsolvable puzzle. Apparently the army has to be changed, but the question is how? The answer is no secret. You need to follow the logic: "new missions - new tasks - new structures." What to do with the "old missions - old problems," and the "old structures"? Or said in another way: is it possible for the existing structures to perform new tasks?

It turns out that this is only partially possible. Let's look at the "newest" challenge - the fight against terrorism. Comparing the armed forces with a terrorist organization, we have seen a wide range of manifestations of asymmetry. The first aspect of this concept is the

asymmetry in the value of the systems. From ancient times there has been striving army as a whole and its elite - officers to possess virtues as courage, honor, and dignity.

Armed forces traditionally strive to minimize casualties among its troops, the enemy and the population. They want to make clear distinction between military objects and civil ones. On the contrary, the object of attack by terrorism is human life, and mostly - unprotected civilian population, and the sacrifice of the perpetrators of the attacks is "cleaned" of religious and / or ethnic fanaticism.

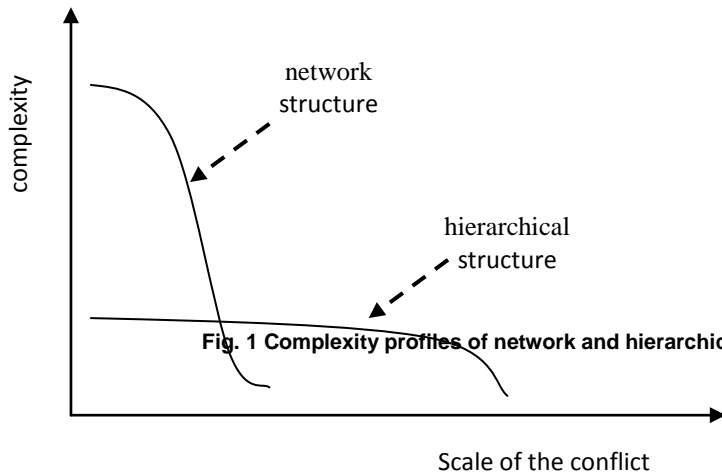
Armed Forces are designed to defend the values of society, and terrorism tries to erode them.

Asymmetry in the value system inevitably leads to asymmetry in approach. Popular nowadays operations effect based and network centric operations become are becoming more informative in nature and involve precision weapons. Modern warfare becomes more and more similar to a computer game in which the enemy is struck by a large distance, such as caused by this destruction are monitored by impartial sensors. Terrorism, in turn, seeks direct contact with the object, where precision weapons are helpless and emotional consequences of destruction and victims are shocking.

These two aspects of asymmetry can be summarized as asymmetry in the objectives and strategies to achieve them.

Officers never left the bridge, not hide behind the armour and in the trenches. The case with the terrorists is exactly the opposite.

Building an artificial system goes through the following stages: nomination of a goal, elaboration of goal strategy and development of a structure for the implementation of the goal strategy. It means that if there is asymmetry in the goals and strategies we should look for asymmetry in the structure. We can say that terrorism is more network structured, while the armed forces are a typical example of a hierarchical organization. The differences in the two structures allow comparing their complexity. One aspect of this complexity is the information. It can be represented by the amount of information necessary for the description of the system as a function of the scale of observation. We can obtain the so-called complexity profile of the system in the manner represented in fig. 1. The scale of observation is associated with a hierarchical level, which monitor the system. When comparing the complexity of the two realizations of the same system, once as hierarchical and the once as a network structure, the rule is that the area locked under the graph of complexity profiles is constant.



It turns out that the complexity of the system is related to its ability to "win" in interconnection conflict.

Problem № 2: the system with higher complexity at the level of the conflict has better chances for success.

The scale of the conflict is determined by the highest level in the hierarchy, because it appoints tasks, and in this sense - controls the degree of freedom in the actions of the performers. Obviously the organization of the armed forces has to take into account the opponent. In cases where there is a structured network enemy (terrorism) is appropriate to delegate more freedom to subordinates and to "enrich" informational capabilities of lower level managers, i.e. to focus on autonomy. In the case of high scale of the conflict, when the opponent has a hierarchical structure, it is appropriate more centralized management, providing integration of all actions in a plan.

Obviously, different goals require different structures. In fact, we observed a typical example in this regard. An international network structured coalition was organized to counter the variety of threats in Iraq. However, when the threats jointed behind the iconic figure of Moqtada al-Sadr and the conflict spilled over to a higher scale of interaction, multinational, more networked structures were inadequate and require the use of highly hierarchical and highly organized formations of the United States and UK. The uprising was put down for days.

Obviously a need for division of labor in terms of security is necessary. As a result there are differences in the equipment, organization and training between the formations who participate in large scale conflicts and those who will participate in peacekeeping. The question is, if the Bulgarian Armed Forces can participate in both military formations? Some considerations show that this is impossible. Dilemma arises: for which type of operations to prepare the Armed Forces? There is an indication that the responsibilities of collective security require the participation of Bulgaria in the response operations of non-military crises. The tasks related to the protection the territorial integrity and sovereignty of the country will be performed in coalition format. However, it should be noted that any military-political organization is based on a community of interests of the participating countries and in case of their rapid change - the collapse of the coalition is very fast. Warsaw Pact was a typical example. The withdrawal of Spanish troops from Iraq is also an example.

In fact, there is a good basis for wider discussion and scientific decision on the issues raised. It is naive to say that this paper is the first that justifies the need for such a discussion. The question is if there is an actual problem why such a debate does not take place?

Problem № 3: in systems there are spontaneous interactions and processes of self-organization. As a

result, connections and relationships emerge that may dramatically improve the performance of system or change the goal of the system, including the occurrence of antagonism in the system with a subsequent decay.

When creating artificial organizational system in addition to the main goal of functioning we maintain some secondary goals and functions. The self-reproduction function is a typical example. In the armed forces, it is realized by maintaining the military educational institutions, building a system for training and many other activities. Another vital feature of the system is the adaptation. In practice, in the artificial military system we maintain as secondary functions reproduction and adaptation, which are the primary functions in the natural systems.

There are all necessary conditions to expect that the military system will tend to behave as a natural system. Let describe some signs of such behavior.

First, the military system will try to reproduce structures in all other systems that interact with the Armed forces. Civil Protection Organization and National Service Border Police are typical examples. Ways of "infiltration" are many and range from the provision of human resources and training, to offering those typical characteristics of the armed forces that are not familiar to civilian systems: strict organization and procedures for everything!

Next, the military's ability to adapt should be noted. In place of the "old enemy" quickly appears "new challenges". Any threat to law and order attracts the attention of the military departments. Natural disasters, industrial accidents, piracy, terrorism, humanitarian crises, in general all sources of uncertainty, are the challenges that the Army can take and what is more important - to handle. Problem occurs only if the armed forces perform typical for all systems tendency to treat the emergent situation as an already familiar. In similar cases very quickly invisible terrorism "evolve" following the sequence: organization - state - "axis of evil" and as a result, the new enemy not only is "visible", but also it "deserve the attention" of the army.

Third, being a system armed forces suffer from "system diseases". Unable to fulfill their function, they exhibit the typical tendency of organizations to grow their management structures and to seize the functions of subordinates. These tendencies are hyperbolized by the fact that the necessity to possess higher complexity at the level of the conflict makes military organizations to maintain in Peace time well developed managing bodies. However, it should be recognized that resources for maintenance of the system are limited. When resource problems emerge in similar systems we can observe a tendency to preserve the structure of the higher levels on account of subordinates. Unfortunately we can observe the symptoms of both diseases in our country. What's worse is that these two trends are typical of systems in crisis, for systems operating on the edge of disaster. A typical example is the behavior of a company facing bankruptcy. Usually begins with the reduction of the personnel directly involved in the production and maintain unreasonably large administration. In practice, this will trigger a collapse and hence the collapse of the structure as a whole. In some organizations, however, this condition can last long time. Typical examples are organizations that are periodically refinanced regardless of the quantity and quality of the products sold, for example - budget organizations.

### **3. CENTRALIZATION VERSUS NETWORKS**

Recently many publications discuss the necessity of modern network organization of the military systems.

The most popular topic of these publications is that military organizations are rather centralized but the modern threats are network organized. The topic discussed above insists on combination of centralization

and network organization. The real question is what type of combination do we need?

One reason for this problem is that even completely artificial, the armed forces system consists of "natural components". These are people with their own motivation and low predictability.

Centralised organisations are more steerable and it is easier to be observed. Their well-developed hierarchy helps management of the informational flows in the system and protects the managing body of informational overload. Additionally the well-developed hierarchy helps enlargement of the structure without informational complication. We can say that centralized organisations possess the necessary prerequisites for satisfaction of management principles as: unity of efforts, stability, personal responsibility.

The classical problems of centralized organisations are their predictability and relative slowness. There are vulnerable to the problematic functioning of high hierarchical levels. Starring the behavior of this organisations reveals some negative tendencies: "escape of responsibility" of the middle command levels, "seizer of autonomy" of the subordinates, informational exchange through "bypass informational channels", "overload" of low hierarchical levels. Additional problem of these organisations is the tendency for overcoming the increasing complexity of the environment through the mechanical approach of development of new hierarchical level and increase in the number of components. Very often these organisations tend to think about the new situations as if they were familiar in the past, in short they tend to apply "universal strategies" and avoid to elaborate new ones. On this background we can say that centralized organisations meet some problems in satisfying management principles as: continuity of command, flexibility, operativeness, initietiveness, and efficiency.

The main advantages of networks are in the area of their capability for fast informational exchange. These capabilities in combination with the variety of relatively independent and alternative informational channels lead to high degree of satisfaction of management principles as: flexibility, operativeness, continuity of command, robustness. On the other hand, because of the already mentioned informational capabilities the networks have some problems with the command and control. Studying of these systems reveals some negative tendencies as: "loss of go", "hesitation and problems with strategy elaboration in new situations", high sensitivity to disturbances. Typical disadvantage of networks is the problem with responsibility in the process maintenance of the go, especially when speaking about so-called secondary goals such as self-education, self-reproduction, etc... In order to realize their full informational capacity networks need periodical actualization of the informational potential of components. One of the most significant capabilities of network organizations is their fast and spontaneous self-organisation. Leading motives for similar behavior are usually aspirations for centralization and/or autonomy. Even briefly presented the result of comparison between two types of organization suggests that, without being antipodes, they mutually compensate their own disadvantages.

The recommendation for combining the advantages and compensation of disadvantages of both structures is obvious. We have many examples of similar compensation. The typical military structure is hierarchical but the commander is helped by a network-organised staff. The other approach suggests that it is better to have network-organised structures on the level of conflict, because they can survive a new situation easily and win in the battle of complexity. This approach insists on

centralization of a network-organised structure on a level slightly above the level of the conflict.

As a conclusion, the modern military commander has to keep in mind that he can modify management and structure of his subordinates in accordance with situation and keep in mind the advantages and disadvantages of centralized structures and networks.

#### **4. THE FRACTAL NATURE OF MILITARY ORGANISATIONS**

That's why every time when we feel overloaded with management tasks, we prefer to establish a new hierarchical level. In very simple words when we have to command more than  $7 \pm 2$  people we are on the brink of our command abilities. If we have to command, for example, 15 people, most probably we will nominate two of them for our sub-commanders and we will divide the rest of the people into two subordinate groups. We will do it every time when we have to add new people under our command. Usually, we will apply this approach until we establish 3 to 4 hierarchical levels below the commander, then we will combine the approach applying the concept of network organisations. This concept we will apply in the following way: First, we will divide the command and control responsibilities into different areas. Second, we will nominate a manager for each of these areas. Usually, the main area (the command area that is responsible for the main function of the system) we will keep for us. And third, we will organize these managers into a collective managing body (staff).

The fact that the organizational components are subordinated to managing body means that in this respect the organisation is heteroachycal. It means that one component at operative level has to comply with the requirements coming from different functional directions.

Through applying this concept, we will achieve the best way of managing the system. Let's point out the key stones of the concept: First, we will establish a new hierarchical level, following the rule  $7 \pm 2$ . Second, we will elaborate the subordinate structure until we achieve maximum 3 or 4 levels of subordinates. Third, the nominated managing body will help us to perform "secondary" managing functions (subordinate to the main one).

#### **5. CONCLUSION**

As a conclusion, we have to point that problems of military management are a classical example of interdisciplinary problems. In order to understand the specifics of military management, we have to apply an interdisciplinary approach. The System Theory is a classic example of such an approach. Without pretending to be exhaustive the paper presents some advantages when applying the system approach to the military organisations. This approach helps us to propose new concepts for solving the "old problems". It brings for presenting the existing problems in new light. In fact, the main idea of the paper is to demonstrate the advantages of the system approach when discussing some well-known problems of the military practice.

The system approach to the problems of establishment and development of the armed forces has not to be understood as an alternative, but it is rather without alternative. Only the deep understanding of the system approach can establish prerequisites for effective and efficient management of the processes in the military systems.

#### **REFERENCES:**

- [1] James, G. Chaos Theory. The Essentials for Military Applications. (<http://www.au.af.mil/au/awc/awcgate/navy/np10.pdf>), 01.04.2006.
- [2] Hill, Ch., Jones, G. Strategic Management. Houghton Mifflin Company: New York, 2008.
- [3] Kevin, G. Complex Targeting: a Complexity-Based Theory of Targeting and its Application to Radical Islamic Terrorism (<http://www.au.af.mil/au/awc/awcgate/saas/glenn.pdf>), 01.04.2006.
- [4] Sernetz, M. (2000). Die fraktale Geometrie des Lebendigen, in: Spektrum der Wissenschaft, July 2000, pp. 72-79, as he was cited by Prof. Dr. Markus Schwaninger. A Theory for Optimal Organization No 38 – November 2000
- [5] U.S. Army DCSINT Handbook No. 1 (Version 3.0) "A Military Guide to Terrorism in the Twenty-First Century", U.S. Army Training and Doctrine Command, Fort Leavenworth Kansas, 15 August 2005.
- [6] Walter Reich, ed., Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind, rev. ed (Washington: Woodrow Wilson Center Press, 1998).
- [7] Yaneer, Bar-Yam. Complexity of Military Conflict: Mytyscale Complex System Analysis of Litoral Warfare. ([http://necsi.org/projects/yaneer/SSG\\_NECSI\\_3\\_Litt.pdf](http://necsi.org/projects/yaneer/SSG_NECSI_3_Litt.pdf)), 01.04.2006.

When speaking about networks and elaboration of new hierarchical levels we have to recognize that both approaches aim to overcome informational problems in the environment. As we mention, the network organisations possess some disadvantages. Maybe the main disadvantage of this approach is the necessity of "well-educated" components and the complexity of the management.

Applying this concept we will achieve a good level of observation of the subordinate system. In fact, we will rise to the top of the system while building the levels above us. In this sense, we will be familiar with the processes that are performed by our subordinates. In other words, the levels of the system will be built on the principle of self-similarity. When speaking about self-similarity, in fact, we speak about fractality.

The organisations developed on this principle are fractal in nature. We used the concept of fractality in order to achieve cognoscibility of the system.

The fractality of the structure results in fractality of the management functions. In fact, every management function on a particular level is similar, on the one hand, to the management function of the upper level and, on the other hand, to the management function of the level below. In the classical management we have 3 hierarchical levels: strategic, tactical, and operational.

We have to point out that in the military management, in fact, we have 4 hierarchical levels: strategic, operational, tactical, and again operational. In order to avoid misunderstanding, let's rename the lowest level "operative", instead of "operational", which means that in military organisations we have the following levels: strategic, operational, tactical, operative. Why do militaries have for levels? The reason is that the strategic level is a political one. Having this level, we have to recognize that it does not originate from the military organization. It is often nominated by the political cabinet. In order to achieve fluent change of the management functions from the top to the bottom, we need one more level between the tactical and strategic that "switches" the strategic order in military vocabulary. That's why we have one additional management level between the strategic and tactical managers.