

## THE PLACE AND ROLE OF MILITARY SCIENCE IN THE SCIENCE UNIVERSE

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**I**n the condition of current revolution in the military field, as a result of scientific discoveries and social and economic changes and of the evolution of human society, the military phenomenon needs a proper scientific foundation for these changes. Changes occur not only in the physiognomy of war and the principles that govern it, but also in military actions and civilian-military or non-military actions taking place in the management of crisis and armed conflicts processes, war prevention and peace keeping. All this, as well as the new challenges, threats and dangers of military and non military nature, the new vulnerabilities and risks require that the military sciences solve a series of issues by involving other sciences. Interdisciplinarity becomes not only a prerequisite for knowing and understanding the contemporary military phenomenon, but it also requires a strong process of integration of sciences into great analytical complexes capable of generating complete and thoroughly substantiated expertise.

Military sciences have reached a higher level of synthetic interpretation and they have moved on from analytical investigation methods, specific to social sciences to fundamental research in order to point out and integrate scientific investigations, having epistemic arguments, of the military sciences or of other sciences. All military sciences correlate with other knowledge sciences, as their components – features or, on the contrary, as their synthesis (see figure 1).

In the current approach of the science epistemology, military sciences appear as a set of knowledge meant to describe exhaustively the military field. However, the military field can not be exhaustively described as it is connected to other fields, and military science, both as a synthesis science and as a component of the scientific universe, can exist only in conjunction with other sciences.

Nowadays, military sciences have reached a high level of generality and theoretical maturity, anchoring itself in a philosophy of relational sciences. Overcoming those issues, concrete-historical and practical, of war and armed battle and the transition to relational, structural and systematic aspects has led to a new manner of thinking: functional, axiomatic, analogue and recursive and to new ways of investigation and shaping of events and processes form the military field. Such a way of perceiving reality allows a higher organization and a best explanation “*of theories, principles and laws of military science*”, enables “the unification of branches and its laws” in an interdisciplinary manner in order to define the military phenomena and to highlight “*their relationship with other social and historical phenomena, structures, and other basic and social sciences*”<sup>1</sup>.

Of all the social sciences, the military sciences deal especially with crises: social, economic, political etc., of dead-limit situation philosophy, assuming a certain way out of it by force, threat, deterrence or violence. Some oppose the military sciences to other sciences, viewing them as sciences of evil, of crisis situations, of violence. They believe that military sciences are not a product of civilization, but a consequence of its degradation. In our view, as society has developed its thinking, culture and subsistence means, the techniques and technologies have also been improved, especially military forms of action. Putting them into practice has only been possible during tension periods, conflicts or clashes of civilizations present in different historical periods as complex phenomena of malfunctioning of human society<sup>2</sup>.

It was found that most wars were not internecine wars. In some cases, exterminations were part of a special category of conflicts. Thus, the destruction of the enemy militaries, explained by Clausewitz as being the main purpose of battles, does not represent, in our view, more than a moment of the ever-changing concept of war. But this concept does not make reference to total annihilation of the enemy, to the destruction of population and goods, but only to the absolute defeat of the enemy army on the battle field. Only a definite victory can lead to the achievement of the political goals of war.

War can not be and must not be viewed only as a terror to humankind, as the worst part of all human preoccupations, but also as a way of solving conflicts through violent means. It is a product of politics, of interests, having its roots in social, political and economic, as well as cultural relations. It is an instrument of politics, a continuation of it through violence. War can be also understood as an

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<sup>1</sup> Tudor Stoian, *Knowledge and truth in the development of military sciences*, in „Philosophical issues of military sciences”, vol. IV, Military Publishing. Bucharest, 1987, p. 53.

<sup>2</sup> Mihail Popescu, Valentin Arsenie, Gheorghe Văduva, *Military art during milleniums*, vol. I, The Military Technical Publishing Center, 2004, p. 5.

“end” of politics, but only in the way that the diplomatic political means and of other nature stop and there are no other solutions, then the parleys and negotiations stop and force is being used instead<sup>3</sup>.

After the First World War, soldiers did no longer wish to be considered slaughter cattle or “cannon fodder”. That is why the war started to be viewed from several angles, as too hard (just as in ancient times). It began to appear more as a demonstration of force, as in medieval times when opponents were intimidated by armies used as means of deterrence, of imposition. From the in-depth study of universal history results that “the fundamental antagonism of the 4<sup>th</sup> century B.C., up until the 14<sup>th</sup> century, at the scale of Eurasian continent, is the one between the migratory (nomads) peoples and the sedentary ones.”<sup>4</sup>

The nomads started the expansion from the space which lay from the Caspian Sea to Manchuria. From there they attacked China, Persia, Byzantium, the Carpathians and the Balkan Peninsula. The sedentary spaces of antiquity were represented by China, India, Persia, Mesopotamia, Asia Minor, Egypt, Greece, Palestine, Syria, Italy, Thrace and Dacia.<sup>5</sup>

In the great conflict nomad-sedentary, the sedentary won because they kept, over the centuries and millenniums, their territory and their language, as well as their customs. The conflict continued and developed over time, it expanded and experienced a strong inside expansion, simultaneously with the emergence of certain civilization, economic and cultural entities<sup>6</sup>.

The philosophy of violent confrontation is very complex and requires a lot of multi- and interdisciplinary research, as it has many branches and interferences, and it modulates on the phenomena, processes and political, military, economic, social and cultural systems specific to human society.

So far, the military sciences have not reached a consensus on the detailed content in key issues of the new military culture, of peace and war, specific to professional armies and to other types of armies, as well as the role and place of the military sciences in the antiterrorist or counterterrorist<sup>7</sup> war<sup>8</sup> because there are over one hundred definitions of terrorism, without excluding the possibility of

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<sup>3</sup> Ibidem, p. 6.

<sup>4</sup> Gerard Chaliand, *Anthologie mondiale de la strategie*, Paris, 1990, p. 19.

<sup>5</sup> Mihail Popescu, Valentin Arsenie, Gheorghe Văduva, *op. cit.*, p. 8.

<sup>6</sup> Ibidem, p. 9.

<sup>7</sup> Counterterrorism refers to offensive operations to prevent, stop, and counteract terrorist actions.

<sup>8</sup> Antiterrorism means defensive measures taken to reduce the vulnerabilities to terrorist attacks through a conditioned reply of the local military and civilian forces.

consensus emergence<sup>9</sup>. From this point of view, we believe that it is necessary to have new approaches of military sciences which meet new geopolitical and geo-strategic realities.

Military sciences should essentially contribute to the development of new peace and war strategies suitable to the new security environment, new threats and new vulnerabilities in order to totally meet the protection requirements of humanity, to guarantee the fundamental rights and individual liberties of all people, by effectively and efficiently using the alternating military means or together with the civilian ones in a logic of saving humanity from self destruction. The governors of developed countries are used to asking scientists for solutions for the serious problems, including those in the political and military field. Thus, for instance, Winston Churchill recruited top researchers from several scientific disciplines in order to decrypt German communications. Countries like France, Japan and others turned to scientists for economic recovery.

Scientists can and should be used also as experts to form the basis of political decisions. The expert quality of political and military decisions belongs to scientists, including the ones in the military sciences field, namely to great creators from security and national defence field.

The nuclear age and the information age (the knowledge age) have brought and will bring significant changes in military sciences, but they will not change either their essence or their spirit (philosophy). There is certain continuity in the space and spirit of military science and a strategic periodicity of war philosophy. That is, each historical era has not simply taken over the war, as theory and practice, nor as political and social phenomenon, from the preceding era, taking it forward, but it took over it cyclically and critically by repeating its characteristic phases.

Thus, each era, at its end, has changed war into an extremely violent confrontation, which becomes unbearable, almost impossible. This is how it was at the end of antiquity, the Middle Ages and Modern and Contemporary Age ended with the two World Wars. Now we are at the end of the machine age and the beginning of the knowledge (information) age which started with the antiterrorist war, but what kind of war will it end with? What Alvin and Heidi Toffler foresaw 30-40 years ago no longer pertains to the future but to the present. Thus, we take part in the Second Wave crisis of institutions regarding education, health, values, and self-government, etc., but we are looking at the effort of creating new institutions of the Third Wave.

*„The creation of new political structures for the Third Wave civilization will*

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<sup>9</sup> The concept of “terrorism” is controversial, being used by different states to outlaw political opposition or external enemies and to legitimize their terror on their forces. In terms of etymology, the word comes from the Latin “terror” meaning “to frighten”.

*not take place in a sole triumphal torment, but as a consequence of the thousand innovations and collisions at various levels, in many places, over a period of several decades.*

*This does not exclude the possibility of violence on the road to tomorrow. The transition from the Third Wave civilization to the one of the Second Wave was a long bloody drama of wars, riots, famine, forced migration, coups and other calamities. Today, the stakes are even higher, the time shorter, stronger the acceleration, the dangers even greater”<sup>10</sup>. These types of change, turmoil, crises and violence must be addressed by the ever-changing military sciences or the transformation of military sciences.*

It is necessary to point out that the object of general military science as an action science, having specific features as compared to the other disciplines which study the war phenomenon, in order to define it as a systemic set of notions, concepts, concrete facts, ideas, information and true knowledge on nature, society, technology and thinking “*regarding the laws and principles of the armed combat, rules and forms of organization, training*”, leadership and use of military organizations and “*armed forces, methods and procedures of military action*”<sup>11</sup> and to reproduce their generalized and abstract reflection and, we would say, the scientific dimension of the armed forces of the country in different specific missions. In terms of etymology, the word science comes from the French *science*, and the term “military” comes from the Latin *militaries*.

The rationale of the military science is that it provides militaries, civilians with a special status and, especially commanders, with information and efficient solutions in order to organize and lead the armed struggle and to efficiently train troops. Obviously, the results of the military science must find an actual expression in establishing such action forms and procedures to give optimum results on the combat field (in the extended space). The knowledge (of existing reality), based on knowledge theory, has always been important at war and it was the essence of the military power. In the evolution of military power the military analysts have always claimed the need to know and understand scientifically the war phenomena but they have given enough action space to military art. As Constantin Hârjeu highlighted, it remains to be seen whether art or science tips the balance in leading the war and armed battle. First, we must consider the character of these two factors. „*A military genius creates, makes art; a military commander, with the exception of geniuses, skillfully uses combat methods and the principles of military science from*

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<sup>10</sup> Alvin and Heidi Toffler, *To create a new civilization. Politics in the Third Wave*, ANJET Publishing, 1995, pp. 115-116.

<sup>11</sup> General Staff of the Romanian’s Military, *The Academy of Romanian Scientists – Military Science Section, Military Science Treaty, Volume I*, Military Publishing House, Bucharest, 2001.

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*the practice of war, in other words he makes military science.[ ... ] In the absence of a genius, leading a war will have, from now forward, need for trial (intelligence) and science. Science will give us knowledge and judgment (intelligence) about the means to use this knowledge to execute the war (knowing is one thing, knowing to do something is another). Because military geniuses do not come when needed, we will have to use abilities which are formed through science.*"<sup>12</sup>

All information about the military phenomenon and the specific area of events leads us to the conclusion that the subject of the general military science is *military action* and its subsequent actions, as well as those supporting ones (espionage, counterespionage etc.) connected with the other human actions meant to influence. To potentate military action does not require analyzing, studying, and taking it separately, but in a holistic, integrative, procedural, and systemic manner, that is seen as an extension of other human actions meant to significantly influence military action. Military action must be viewed also as a military component of the security environment.

Military actions could be of the following types: *military actions by essence (armed battle); military actions through destination, and actions implying fighting, as well as non-military actions without which the military actions are doomed to fail*, which waver between being and not being lethal. All of these types of military actions that take place in a certain space and have certain duration in time represent *the battlefield* (the open battle space). Military action is based on a complex social relationship that is political and a relationship of conflict (which comes from the armed conflict between social groups, peoples, nations, states, coalitions of state), in its acutest form of manifestation, *violence*, but also other types of relationships. As one of the poles of human action, in relation to harmony, violence "*summarizes the deep meaning of human life*" and "*... is the key of morality*"<sup>13</sup> in society. *Human life varies between the immoral law of violence and the moral law of love, the latter being recessive. "The recessive duality violence-love can take a different shape, more visible, more general but less decisive: conflict-harmony. Human life takes place in the turmoil of conflict but it does not stop to aspire, with pointed eyes, towards harmony and peace."*<sup>14</sup> For the entire social life, coercion and violence are essential and represent the dominating reality, while harmony as an ethical principle has a challenging role, although it is superior in value. Military action represents one of the ways of acquiring wealth and it

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<sup>12</sup> Constantin Hârjeu, *Army's preparation for war. Study of organization, physiology and military training*, Bucharest, Socec graphics workshops, 1921, p. 191.

<sup>13</sup> Mircea Florian, *Recession as world's structure*, vol.2, Eminescu Publishing House, Bucharest, 1987, p. 9.

<sup>14</sup> Ibidem.

oscillates between violence (armed struggle) and non-violence (non-violent military actions). The non-violent military action represent an action that aims at achieving or preserving a state in the military field in safety-security conditions, while the violent action is „*the violence or force embedded in law*” which is behind all actions of a state (government). „*Any government – according to A. Toffler – is based on the army and the police in order to inflict their will. This ubiquitous threat – present and necessary – of the official violence in society helps maintaining the system going, making possible the application of the current business contracts*”<sup>15</sup> and giving as solutions mechanisms to peacefully solve crises. Thus, paradoxically, the threat with violence helps maintain a non violent daily life by that type of violence which is, next to wealth and knowledge, one of the most important springs of power.

Both through content and physiognomy, military action is a part of the human action. By its features of social action meant to disrupt the opponent’s action system, to capture or destroy him and to destroy his weapons and combat technique, the military action has many similarities with other types of social actions but, also, a number of differences. The similarities reside in the generic definition of the concept of action, *as a deviation or change of the normal course of events by inserting the agent in their trajectory, as an event that is the outcome of an intention or human purpose, as well as in the similarities which deal with human actions and refer to the structure of action.* The differences between the military action and other types of (social) action including the political action, reside in the nature of the agent involved in action, having the purpose of action, as well as in the means used in combat. Changing the political purpose in military purpose and objectives stresses the essence of policies of military action and, especially, the crucial role of politics in its direction.

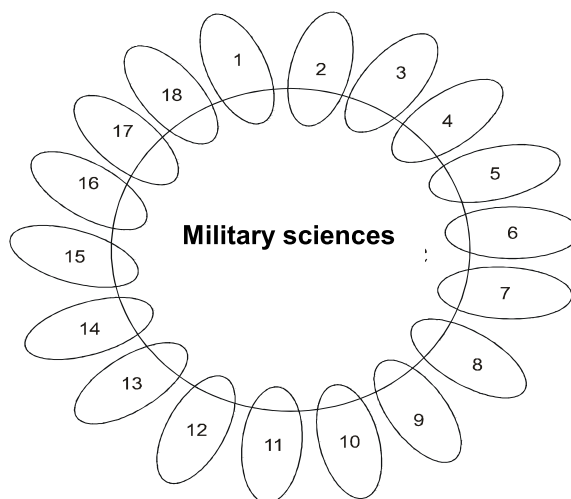
As research methodology of the military phenomenon and, as an information organization method regarding the field of military action, the general military science holds an important place among other sciences (see figure 1). Thus, military science is *a logically organized set of sentences that summarizes information about all military actions and of war, as well as the connections and relationships established between them, between them and the whole (military action as a whole), between military action and the other types (genres/species) of human action and between military action and human action in general.* The information related to sentences concerns not only the circumstances of existence of the elements of military action, their state and evolution under necessary and sufficient circumstances, but also of the random ones.

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<sup>15</sup> Alvin Toffler, *Powershift, Power in movement*, All Publishing House, Bucharest, 1996, p. 23.

As scientific research culminates with the development of a theory, implicitly the military scientific research results in a *general theory of the military science*. In the concept accepted by the academics, the general theory of military science includes: the categorical system, the sentence system and the methodology (a set of methods and techniques of investigating the object of study).

1. Philosophy
2. Chemistry
3. Physics
4. Technical Sciences
5. History
6. Geography
7. Security
8. Law
9. Logistics
10. Diplomacy
11. Politics
12. Sociology
13. Topography
14. Psychology
15. Praxeology
16. Medicine
17. Ecology
18. Meteorology etc.



*Fig no. 1: Military sciences and other border sciences and disciplines*

In his work about general military science, Carl von Clausewitz used the following scientific methods: the war game, the case study, the military exercise, and the method of dialectics.

As a consequence of the industrial revolution, in the nineteenth century new weapons appeared and also new organization and new methods of military action that required the emergence of new theories and principles of armed struggle and of the general military science, which led to the diversification of study fields.

The experience gained in war and armed struggle imposed its generalization and expression in the theoretical form of a coherent and united system of categories, concepts and definitions.

The system of categories comprised by the military science includes concepts and basic concepts used in investigating the phenomena related to armed struggle and in solving the problems related to practical action. Among the main



categories which are included in the general military science we can mention: military action, military purpose (mission), military standards and regulations, armed forces, military potential, fighting power, fighting means, weapons and combat equipment, combat army, offensive, defensive, maneuver, battle, military campaign, surprise, certainty, factors that influence the success or failure of an operation etc.

In the general military science, *a series of conceptual opposites are used, although the multiple meanings and implications of these concepts, their strategic and technical consequences are not always noticed*<sup>16</sup>, as expressed in pairs: the offensive-defense, attack-counterattack, offensive-counteroffensive; space-time; material forces- moral forces; maneuver - counter maneuver; impact-protection; surprise-safety; success- failure etc., on which the systems of strategic and tactic military thinking were set up.

Among all these, only four types of relationships are considered as characteristic to the concept series of opposites in the military field: *the relationship of opposition; the relationship of covariance; the relationship of asymmetry and the relationship of inversion*. Each of these has its own content and is in close and mutual contact with the others. *The relationship of opposition* is probably the best known and maybe that is why there is a tendency towards its absolutization. Some pairs, such as, for example, man-technique, defensive-offensive, maneuver - counter maneuver are assessed as part of a series involving moments, situations and different connections, the opposition ranging within certain limits. The opposition terms are differentiated in the armed struggle by the value which they can make in certain situations, by different influences and conditions that they may generate in the design and outcome of the warfare. *The relationship of covariance* is defined in the correlated evolution of terms. During evolution, each term has its own trends, but the movement is determined in the couple of opposites, through a mutual and specific conditioning of the development directions.

*The relationship of asymmetry* reveals that within each pair one of the terms mainly acquires a certain prevalence and superiority to the opposite term, at least for a certain time and under specific circumstances. Asymmetry is an important feature of the forms and procedures of the armed struggle and of the military science concepts which try to avoid the mistake of believing that in the same circumstances of using technical means of fight, the parties at war will necessarily apply the same processes, will act on the same strategic and tactical

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<sup>16</sup> Dr. Corneliu Soare, *Dialectica luptei armate*, Editura Militară, București, 1981, p. 45.

concepts. *The relationship of inversion* expresses the property of certain forms and methods of struggle to change alternatively the possibility to adopt attitudes and use different methods in the tactical or operational plan against the strategic one<sup>17</sup>.

The military phenomenon in general and in particular that of the armed struggle is described by a set of propositions, with a structure introduced by the relation of deductibility, which are statements that have the status of premises, assumptions, axioms, definitions organized logically, and characterized by uniqueness, ensuring that unique and specialized realm of the theory of the phenomenon of armed struggle. Therefore the science differs so much by other military sciences, especially because in the military science mathematical or physical laws specific to the war have not been discovered yet.

A significant place in the ensemble of sentences is occupied by the axioms, which makes military science acquire the character of an axiomatic system in addition to the logical one. The axioms of the general theory of the military science are law-like statements that govern the armed struggle and are manifested as essential, necessary, general, repeatable and relatively stable relationships among the internal sides of the war phenomenon, and also between these and other areas of social life which determine the preparation and conduct of military action.

Military science operates both with the laws of military science and with the laws that govern military action.

Laws of science are essential elements of military theory, forming its core, its entire specific content and subsuming the laws of theory confer it sistemicity, a theory which makes a complex and desirable moment of scientific knowledge in the military field.

The laws governing the military action are those essential, general and special relationships without which the armed struggle as the main constituent of military action, could not exist and could not take place. It may be admitted that military action is in the middle between the purpose (mission) and result (carrying out the mission); *the genetic laws* (principle of action and reaction); *laws and structure* (concordance of purpose, power and means etc.); *laws of correlation / relation* (dependency forms and procedures of military actions and the development of combat arms; addition capacity to fight the armies of the development of productive forces etc.) and also the laws of action (dynamics), such as those concerning the balance of forces, the increasing scale of armed struggle and so on. We can find these laws governing military action in other areas of human action with a general character, but in case of their application to achieve

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<sup>17</sup> Ibidem, pp. 46-54.

some military goals, using specific corporate agents (subunits, units, large and armed units) and also unique means (weapons and combat equipment), in violent circumstances of armed type (armed conflict), the laws become specific, being found as *the laws of armed struggle*, with an exclusively explanatory character.

Typically, in the military literature a series of sentences are presented as laws, but these laws must be researched and verified so that to reflect indeed logical relationships, proper to military actions. If the number of this kind of statements increases, the phenomenon of armed struggle as a whole will be better outlined. The epistemological character of military knowledge also involves the research methodology problem in military science.

As object of knowledge, in a holistic vision, the military action is presented in two main instances: at peacetime and wartime. *At peace*, the specificity of military action comes from the types of military assets used, according to the military doctrine. *At war*, the military action takes the form of armed struggle, seeking not necessarily the destruction of the enemy, but its defeat.

The research of armed struggle has the following aims: to bring new elements regarding the manifestation of the laws and principles that govern military action against the progress in knowledge with qualitative leaps achieved by means of fighting and new information and conditions in which the goods acquire high-tech companies aiming to reveal many aspects of manifestation of violence, the phenomenon of armed struggle; to develop a unified picture of various disciplines that study the armed struggle; to highlight the multiple and complex determinations and mutual conditioning between the armed struggle and other types of social actions; to produce an analysis of relational and functional changes that occur in the structure of military action in the new conditions for conducting the war; to build some strong, stable, mobile combat systems, etc.; to build some action models characterized by a high rationality based on clear, effective and efficient standards; to clarify the meaning of concepts, terms and notions that describe the armed struggle and so on.

The armed struggle is known today as an ensemble of connections established between opposite trends and it is presented both as a complex reality and also as a logical explanation. As an object of the scientific research, the armed struggle is studied: a) as a real process and as a process of thought; b) as an expression of multiple interactions; c) as a change and development of the components and situations; d) by conceptual series of opposites.

As a real process and as a process of thought, the armed struggle is presented, on the one hand, as a relation based on objective legacies, in which all forms of struggle, interactions, changes exist and are carried out under the social and

military determinism, and, on the other hand as concepts, ideas, theories, doctrines, which have their own development, a relative independence and an active role in organizing and leading the armed struggle.

The multitude of military and nonmilitary factors of the armed struggle, present in struggle situations, are necessary for their study both under the influence report which is exerted on the struggle, and their permanent characteristics, and especially because of the numerous, different and complex interactions established between them and which determine the existence and ending not only of the armed struggle but also of war itself.

The analysis of armed struggle as qualitative development requires its research also through the prism of military time, as a particular trait of the socio-historical time, revealing the process of the components of armed struggle intensified as rhythms and scales, and also as a dialectical analysis of combat situations. The dynamics of development of the armed struggle components, the frequent changes of circumstances which determine each fight case is unique, never identical to another. *„Every combat situation is unique, but it includes in totality its general, particular and singular elements, repeated elements, and others that have not ever met. Consequently, the uniqueness of situations and their temporal change are not incompatible with the existence of some general principles of organizing and waging the armed struggle, of a military science, but require the application of knowledge and principles to be based on the peculiarities of each concrete situation." So not teaching schemes, recipes, template-formulas and pre-established solutions will ensure the success<sup>18</sup> in battle, but a type of thinking and a willingness action of the well equipped and the well trained soldiers to take the appropriate course of action for every specific situation.*

The general military science, as science of military action, has experienced during its historical evolution, as well as other social sciences, different approaches and paradigms. At first, this science was only a sum of rules related to the management and leading the war as a whole, but also of the military campaigns, which then met the scientific needs of the commanders of armies.

Therefore, ever from its beginning, it has not reached the level of a clearly scientific field, being actually a sum of empirical observations and conclusions about the military phenomenon in general and about military action in particular. In time, the knowledge derived from the empirical observations has been supplemented with new concepts and new military sciences which appeared.

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<sup>18</sup> Ibidem, p. 41.

Machiavelli, in the sixteenth century, thought that the general military science was the art which comprises three areas: strategy, tactics and geography.

In his book, Machiavelli describes the military phenomenon, but he does not explain it. Only in the eighteenth century are the principles of military strategy developed and the military action is scientifically analyzed. But the military scientists all agreed that the father of modern and general military science is Carl von Clausewitz, general, teacher and army commander, who wrote his monumental work "On War" in which he examines scientifically the armed struggle as an essential part of the war. Clausewitz is the one who divided the concept of armed struggle and used scientific methods to investigate the subject.

In its research object of study, the general military science used different methods and procedures required by different orientations and philosophical and scientific guidelines. Today, the research methodology in the general military science uses a wide range of methods and procedures, some of them being common to many sciences or borrowed from other sciences (empirical methods – observation and experiment; analytical methods – induction and deduction; the dialectical method; the structural method; modeling and simulation, etc.)<sup>19</sup> but also specific methods, such as: *the method of military exercises and war games*.

The method of exercises was used only in military science, being, as I previously stated a specific and particular method of the general military science. The one that initiated this method is Verdi du Vernois who admitted that he read about it in the "Little War" by Valentini. Valentini's and Verdi's du Vernois' writings, especially the latter's, show that using this method is beneficial in preparing officers and provide numerous examples of its effectiveness.

Verdi du Vernois shows that the method of exercises is superior to the speculative methods used until then, starting from the observation that "*war, like all acts, is not learned by means of speculation, but by means of experiments*"<sup>20</sup>. He shows that, after several years of attempts to find ways for developing the military intelligence, "*the following method seems more convenient: to represent by the continuous exercise of individual cases different situations, learning in these examples about the nature of war and to develop the skills mentioned above by an abundance of positive decisions and specific orders. The method of military exercises will more easily lead to this result.*"<sup>21</sup>

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<sup>19</sup> See *Metodologia cercetării științifice în știința militară. Elemente de epistemologie și praxiologie*, Editura A.Î.S.M., București, 1999

<sup>20</sup> Verdi du Vernois, *Studiu asupra artei de a conduce trupele*, traducere de N .Băicoianu, București, 1872, p. 18.

<sup>21</sup> *Ibidem*, p. 19.

Although the method of military exercises was originally used only for teaching, it has been gradually introduced in research, for the deduction of procedures and usage principles of new weapons, new modes of cooperation between types of weapons, new combat devices etc.

The military exercise, given the conditions of changes that take place in the contemporary military phenomenon, is not only a method but represents lots of methods, fact which increases the possibility to investigate the armed struggle. The exercise procedure is different from the military experiment and aims at monitoring the evolution not just of a phenomenon or a side of it, but the whole system of elements and processes that make up to a certain level the armed struggle. This brings a higher coverage capacity of the complexity of the military action and expansion (as much as) the field of operating variables.

Although the method of military exercises seeks to establish the closest conditions to the real battlefield, the hypothetical element is more pronounced than in the experiment. Thus, the circumstances of the fight (the previous actions, geographic area, weather, equipment, composition of combat, devices, existing information, possibilities and intents of the enemy etc.) are hypothetically determined, taking into account the experience of past wars, the lessons learned from the recently concluded ones, the statutory rules, the views on war, strategy, operational art and tactics. The general military science is an action science, yet not of any action, but of an effective and efficient one. Today it is necessary to rethink military sciences in order to meet the requirements of present and future reality, the phenomenon of armed struggle and war, as a complex phenomenon: political, social, economic, financial, cultural, scientific-technological, virtual etc.

We believe that the new paradigm of general military science will contain the following basic law: war is aimed at defeating the enemy (opponent) forces or bringing them in a position to recognize defeat and accept the conditions imposed on him and military actions and especially the armed struggle is meant to achieve this fundamental goal (objective). The transformation of the Romanian Armed Forces is, first of all, a product of military science, of essential understanding through science, of the Armed Forces architecture, respectively of the Romanian Army, designed in the strategic paradigm of sustainable development. This imperative transformation is integrated philosophically in the complex process of NATO's transformation, being a continuous process of developing and assuming

new concepts, strategies, doctrines and capabilities to improve effectiveness, efficiency and degree of interoperability of forces.<sup>22</sup>

"Determined decisively by the alert, nonlinear and sometimes unpredictable evolution of the security environment incorporating, directly or indirectly, the transformation of the national military institution is an already highlighted sentence, a reflection of the action,<sup>23</sup> but also of the scientific changes that occurred in the state and ontological condition of armed forces.

## BIBLIOGRAPHY

- Tudor STOIAN, *Cunoaștere și adevăr în dezvoltarea științelor militare*, în „Probleme filosofice ale științelor militare”, vol. IV, Editura Militară, București, 1987.
- Mihail POPESCU, Valentin ARSENIE, Gheorghe VĂDUVA, *Arta militară de-a lungul mileniilor*, vol. I, Editura Centrului Tehnic Editorial al Armatei, București, 2004.
- Gerard CHALIAND, *Anthologie mondiale de la strategie*, Paris, 1990.
- Statul Major General al Armatei României, Academia Oamenilor de Știință – Secția de Știință Militară, *Tratat de Știință Militară*, Volumul I, Editura Militară, București, 2001.
- Constantin HÂRJEU, *Pregătirea armatei pentru război. Studiu de organizare, de psihologie și de instrucțiune militară*, București, Atelierele grafice Socec, 1921.
- Mircea FLORIAN, *Recesivitatea ca structură a lumii*, vol.2, Editura Eminescu, București, 1987.
- Alvin TOFFLER, *Powershift, Puterea în mișcare*, Editura All, București, 1996.
- Dr. Corneliu SOARE, *Dialectica luptei armate*, Editura Militară, București, 1981.
- Metodologia cercetării științifice în știința militară. Elemente de epistemologie și praxiologie*, Editura A.Î.S.M., București, 1999.
- Verdi du VERNONIS, *Studiu asupra artei de a conduce trupele*, traducere de N.Băicoianu, București, 1872.
- Alvin și Heidi Toffler, *A crea o nouă civilizație. Politica în Al Treilea Val*, Editura ANTET, 1995.



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<sup>22</sup> Eugen Bădălan, *Armata României – 2025. Cultura transformării. Transformarea culturii*, în *Gândirea Militară Românească*, nr. 4, iulie-august 2006, p. 11.

<sup>23</sup> *Ibidem*, p. 12.