



The 9th International Scientific Conference
**“DEFENSE RESOURCES MANAGEMENT
IN THE 21st CENTURY”**
Braşov, November 14th 2014



**CAPABILITY BASED PLANNING –
HISTORICAL PERSPECTIVE**

Marin Mitrică

71st Air Base / Câmpia Turzii / Romania

Abstract:

The goal of this paper is to enunciate the concept of capability as the core of the text and then, upon it to open one or two possible directions for further development. The text remains in the academic realm (providing the author has the ability to do so); in turn no practical solution will be asserted. For defining the concept, a brief pass through history will be followed by several current definitions and a final statement will encompass all of them. This is also the point where the concept of fractal is introduced as a possible mathematical tool for assessing the outcomes of the capability-based system.

Key words: capability, Cold War, structure, fractal, symmetrical, asymmetrical warfare.

1. Introduction

The concept of capability originates in the welfare economics realm, being introduced as the theory of capability approach by Amartya Sen in 1979 (its philosophical ferment being however traceable far in the past, at Aristotle and later on at Adam Smith and Karl Marx). He further develops his theory in the 1980s successfully harmonizing a range of ideas excluded until then from the traditional thinking in that field. On this regard, the core focus of the capability approach is on what individuals are able to do or, in other words, on what are they capable of.

Hence, the theory emphasizes functional capabilities – so called substantive freedoms, such as the ability to live to old age, to be engaged in economic transaction or being involved at different layers in social life – in the detriment of utility or access to resources (income, commodities, assets) and interprets those freedoms in terms of what people have reason to value (happiness, desire fulfillment, choice). Poverty is understood as capability-deprivation.

It is noteworthy that the emphasis is not only on how human beings actually function but also on their having the capability “to achieve outcomes that they value and have reason to value” [1]. Someone can be deprived of such capabilities in many ways ranging between ignorance, institutional oppression and lack of financial resources or false consciousness.

At this point it is useful to note that recurring from substantive freedom earlier mentioned, the freedom of choice, individual heterogeneity and the multi-dimensional nature of welfare are three important features that create a connection to the military phenomenon. It would be of course strange to think of the military in terms of welfare but this is not the point. Instead, considering the freedom of choice as the ability to perform

CAPABILITY BASED PLANNING – HISTORICAL PERSPECTIVE

decision loops with no regard to the level of the military structure leads to the idea of decentralized control and operational flexibility; individual heterogeneity is an obvious, all-present reality among military at national level but even more at the level of an alliance or coalition. The multi-dimensional nature of warfare is to be regarded as the multi-tiered, wide spread gamut of possible usage of the military by a nation along its path through the history.

2. Historical perspective

Since the dawn of the humankind people had been facing a wide variety of opposing entities; at the beginning they were struggle against impersonal environmental challenges – adverse weather, huge predators, earthquakes and erupting volcanoes – using the best available technological solution of the time. They never found a way to defeat a volcano (nor they do today) but dodge the effects by fleeing away.

Later, as people aggregate in communities, the opposing forces became more personal. Armies were standing in front of each other and an observer would be able to predict the outcome of the confrontation simply by comparing against the sizes of the armies, their equipment, the way they maneuver, the features of the terrain they are holding; the ability and wisdom of the commander.

On this regard, the differences between let's say the Persian army *versus* the Spartans and the German army *versus* the French army are just a matter of means and this *status quo* extends and encompasses even the Cold War military endeavor. Very effective at that time, this approach – for the concision's sake throughout the remaining of this text it will be addressed as The Old Way – guaranteed that, as long as an army is bigger and better equipped and his supreme commander possesses a well-funded know-how of war, there is high probability that army will win.

But this has come to an end; the fall of the Berlin Wall unbalanced the global equation of military power creating hard to imagine circumstances in the past years and opening the gate towards a profound process of transformation in the substance of the military around the globe.

3. Symmetry and non-symmetry

The symmetric warfare is the concept and at the same time a practical approach of planning the military dimension of a given nation with respect to the most likely potential enemy's military power. Hence, a force structure is defined as the combat-capable fraction of a military organization describing how fully equipped military personnel is organized in order to accomplish the tasks, missions and operations defined by the particular doctrine of the service or demanded by the environment of the conflict.

As long as the Intelligence Services were effective, it was unlikely for a secret to last too long. And even so, inferring from the effects the presence of a force vector was eventually revealed. In turn, the opposing nation takes all the strategically sound measures to counterbalance the threat. Because the threat was well-known and tangible and the planning process was just a matter of calculus.

In many ways different, the asymmetric warfare concept with all his subsequent developing emerged as a solution for shaping and planning the military component of a nation or coalition. This concept is the expression of the nowadays reality whose features are altered by illusive threats. Conventional and NBC warfare are of course on the list but this is prolonged with terrorist attacks, cyber war, economic and / or financial entanglements, drugs and human trafficking and so on. It became not practical to create

CAPABILITY BASED PLANNING – HISTORICAL PERSPECTIVE

and operate a service for every type of threat the reality may pose mainly because of the huge costs implied and because of the inherent stiffness and lack of versatility a complex structure like this may manifest.

A wide range of threats requires either a wide range of specialized forces to counter them with all the costs involved or a military structure able to dynamically shape itself to face whatever challenges may arise. The capability approach comes to shift the focus from The Old Way's parameters (size, number, quality of a service and so on) to what really matters: the challenge. It is a multi-layer endeavor spreading from the highest peaks of the volatile political environment down to the level of execution. It is defined in many ways and manifests itself under a variety of flavors but these are only apparent differences. The following paragraphs briefly pass through the definitions of the most prominent military forces of the West.

A military capability is regarded as the ability to provide an operational effect required by the operational standards specific to an environment, in a specified time and to sustain that effect for as specified period of time. It is provided by a system known as DOTMLPFI (which stands for Doctrine, Organization, Training, Materiel, Leadership development, Personnel, Facilities, Interoperability); this is further augmented by readiness and deployability.

An even wider definition states the military capability as the ability to provide a military effect (winning a battle or capturing a terrorist group). Four major components concur to achieve this: Force structure, Modernization, Unit readiness and Sustainability.

Force structure is represented by the number, size and composition of the units comprising the defense force.

Modernization is the degree of technological development of the weapons, systems and platforms.

Unit readiness is the ability to provide a capability required at a specific moment for a specific task or mission. **This is derived from the ability of each unit to deliver the outputs for which it was designed.**

Sustainability represents the ability to maintain the necessary level and duration of operational activity to achieve military objectives. It is a function of providing and maintaining those levels of ready forces along with all the logistics implied necessary to support the military effort.

<http://www.heritage.org/research/reports/2014/05/measuring-military-capabilities-an-essential-tool-for-rebuilding-american-military-strength>

Another model is FIC – Fundamental Inputs to Capability – and is featured by a system containing Doctrine, Organization, Personnel, Collective Training, Major Systems, Supplies, Facilities, Support, Command and Management.

The Canadian standardized model for the system's aspect of capability (PRICIE) consists of Personnel, Research & Development / Operational Research, Infrastructure and Organization, Concepts, Doctrine & Collective Training, IT Infrastructure, Equipment, Supplies and Services.

Thoroughly analyzing the above definitions a higher level of generalization can be achieved. Thus, a capability is an articulated system of Will, Means and Ways, where Will

CAPABILITY BASED PLANNING – HISTORICAL PERSPECTIVE

is the will to act toward a goal, manifesting at the same time qualities as integrity, leadership, motivation, morale, will to improve and implement change and so on; the Means are the equipment, the training, the sustainability, the readiness and all other measurable and tangible elements; the Ways are represented by the body of doctrines, rules, regulations, principles, all the ever-changing texts designed to shape the system in an ever-changing environment.

Remarkable at this definition is the fact that it underlines the scalable character of a capability. Although at different levels the three members (Will, Means and Ways) can be found in different proportions, the articulated system is still congruent with itself and thus, functional. This feature of the capability approach leads to more esoteric areas of the academic realm, specifically to the fractal theory.

In short, a fractal is a mathematical set that displays self-similar patterns [2]. It may exactly repeat itself at every scale or it may nearly repeat itself at every scale [3]. As mathematical object the fractal is characterized by a fractal dimension which distinguishes it happens among the regular geometric figures. Manifesting an unusual behavior upon scaling in relation with its topological dimension (**doubling the edge lengths of a square scales its area by four**, as the square is a two-dimensional figure; **doubling the radius of a sphere, its volume scales by eight**, since the sphere is a three-dimensional figure; if a fractal **one-dimensional lengths are all doubled, the spatial content of the fractal scales by a number which is not an integer**) <http://en.wikipedia.org/wiki/Fractal> it might be found a way to quantify some of the capability's features in terms of a fractal's elements in order to simulate the evolution of the inputs and outputs of a capability at different levels of implementation.

The capability concept is not, of course, The Holy Grail of the defense. It has drawbacks and the most acute of all are the relatively high costs incurred by implementation of this concept in its purest form.

4. Conclusion

In a world where technology merged with information and communication in a so democratic way, the possibilities for an individual to manifest itself in society are consistently extended both towards constructive and destructive goals. So many means of disrupting functionality of a society are to be balanced by a wise, well-weight solution, devised in a way that efficiently and effectively faces the threat and on the other hand keeps the costs (not only in terms of money but also in terms of human rights) to a minimum. Considering this, the capability approach in defense poses obvious advantages over the older force structure approach, which might lead to further development of the military.

References:

- [1] Sen, Amartya, *Development as freedom*, Knopf Publishing Group, New York, 1999, p. 291;
- [2] Gouyet, Jean-Francois, *Physics and fractal structures*, Mason Springer Paris/New York, 1996;

CAPABILITY BASED PLANNING – HISTORICAL PERSPECTIVE

[3] Mandelbrot, Benoit B, *The fractal geometry of nature*, MacMillan Publishers Ltd., 1983.