



# EFFECTS -BASED OPERATIONS AND THEIR COMPARISON WITH OBJECTIVE- BASED OPERATIONS

Though effects- based operations started to be used as a method for planning at the beginning of the 90's, its conceptual application has been used by great military commandants during History. However, after the Persian Gulf War, 1991, some authors presented this type of operations as an alternative to the traditional way of doing war, the main method of which was based on objectives. This article tries to establish differences, similarities, advantages and disadvantages of both concepts in order to go deeper in a topic that is an essential part of planning and, in particular, at operational level.

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## INTRODUCTION

In the History of War, victory has been sought in two ways. The first of them and the one that General Deptula mentions in his work<sup>1</sup> is annihilation through the destruction of the enemy. The second one is to exhaust the enemy before they do that with us, a concept called war of attrition. With relation

to the traditional manners to think war, the initial idea of the operations method based on effects or effects- based operations (EBO) proposes a new perspective of the topic, based on the fact that the main purpose of a war is to change the behavior of the enemy and the way to do this is not destruction or physical damage of the target, but the effect of the action on it.

During the 90's and the first decade of the 21st century, effects-based operations were implemented in an ongoing and systematic manner, not only in Western air forces, but they also started to take part in joint and combined operations and were implemented in an integral manner in the Armed Forces of the United States and military forces of the North Atlantic Treaty Organization (NATO). In this way, the planning, conduction and execution system for them was tested in several conflicts which took place during said period.

After the Kosovo War, during which EBO were used in planning operations, new questions as to this concept appeared. First, there were doubts as to their effectiveness in the application for joint operations in which land forces take part and, also, as to the fact whether they are an alternative or supplement of objectives-based operations (OBO).

Said facts led to a strong debate at doctrine centers in the United States as to the convenience to continue with the concept of EBO in joint operations.

In 2008, General Mattis from the Joint Forces Command stated: My opinion is that EBO have been wrongly applied and have extended too much to the extent that, actually, they are an obstacle instead of helping joint operations<sup>2</sup>. On the contrary, the United State Air Force (USAF) continues their research and has deepened the implementation and teaching at all levels.

Because of this, there are clear problems that have been caused after the use of effects-based operations. This leads to wonder what effects-based operations and objectives-based operations are and what differences they have.

## ORIGIN AND EVOLUTION OF EFFECTS-BASED OPERATIONS

According to different authors, such as Edward Smith, the work of whom is analyzed in this article, we cannot state that effects-based operations appeared in the 21<sup>st</sup> century, in fact, they were systematized as from the Persian Gulf War but they have been applied throughout history.

We can mention Sun Tzu as the first one who expressed a principle based on effects when he stated:

*Therefore, the ones who are truly skillful at war subdue the enemy army without a battle, they seize enemy cities without attacking them and they take the enemy state without long campaigns<sup>3</sup>.*

Many years later, the British Colonel Basil Liddell Hart in his work *The Strategy of Indirect Approach* proposes maneuver aimed at getting the best conditions to defeat the enemy without producing a decisive battle, a concept related to an Eastern philosophy of understanding war.

It is true that as regards the appearance of EBO as applied and developed methodology with the purpose of being used in military operations, Brigadier General

***According to Smith, the effect needs to be created so that the observer may get involved in the decision-making process and to react according to what has been expected. This reaction of the enemy is subject to a series of factors such as culture, mental model and experience and training of the observer.***

David Deptula is one of the pioneers in the concept of this type of operations.

After having served as part of the Staff of the Air Component of the Military Coalition during the Persian Gulf War, he published *Firing for Effects*, edited in the year 1995, in which he presents part of this theory.

Deptula's concepts are based upon three main elements:

1. Development of technology applied to war, such as furtive aircraft and precision weapons
2. The concept of war in parallel developed by USAF Colonel John Warden<sup>4</sup>
3. Planning of effects to be obtained

The result of these three statements results in the concept of EBO, in which the effect to be obtained over the objective is more important than its destruction.

The progress of new technologies applied to war produced a series of changes in its development. Furtive aircraft, the increase in efficiency of electronic war aircraft and the appearance of command and control aircraft in real time of combat meant, for Deptula, an evolution in the nature of war<sup>5</sup>.

Deptula gives an example of real planning during the Persian Gulf War, 1991, in which a certain amount of planes was necessary to destroy Iraqi bunkers, anti-air defense and their missiles. This author stated that with furtive aircraft, it was possible to carry out the same operation though with less aircrafts and in a more efficient manner. Therefore, it was concluded that in an air journey, it was possible to obtain

1. Deptula, David A., *Effects-Based Operations: Change in the Nature of Warfare*, Arlington, Virginia, 2001, p. 1.

2. Mattis, James N.: *USJFCOM Commander's Guidance for Effects-based Operations*, 2008, p. 21.

3. Galvany, A. Sun Tzu. *The Art of War*, 8th edition, Madrid, Spain.

4. USAF Colonel John Warden created the model of "five rings" and applied it in *Instant Thunder*, the air operations plan of Desert Storm. Subsequently, he expressed his ideas in the essay "The enemy as a system".

5. Deptula, David A., *op.cit.*

the same effect with a smaller number of planes and without destroying the whole system.

With respect to war in parallel, Deptula describes two types of related military operations according to time and which may be summarized by means of an analogy with the operation of an electrical circuit.

While series operations need to affect an objective in order to reach the following, operations in parallel tend to affect all circuits at the same time (Figure No. 1). This allows to obtain immediate effects over different systems of the enemy.

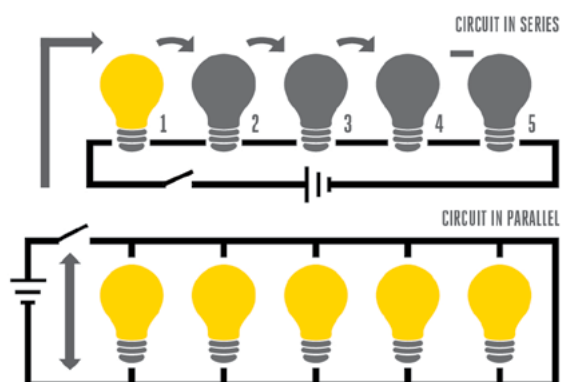
These operations in parallel must be carried out through a simultaneous attack to the enemy's defense system and they must even be carried out, according to his opinion, simultaneously over all the enemy's power centers or the so-called Warden's five rings, resulting in a simultaneous-parallel attack to cause the strategic paralysis of the enemy.

As any theory that evolves with time, Deptula took the two concepts described before by other authors. Operations in parallel were described by Colonel Warden and strategic paralysis by Basil Liddel Hart. Deptula related these concepts with the effects in order to get an objective.

This led him to infer that by means of tools described, it was better to plan pursuant to exit data of military actions (results to be obtained), that is, according to the effects this action produced or would produce on objectives rather than the simple search for its destruction. This is where the third element of his theory appears: planning based on effects.

According to Deptula, effects-based operations are based upon the concept of enemy control, in which success is not measured by the application of force on the objective, but the effect that this application produces and to the extent this effect allows to get control of it.

FIGURE NO. 1: CIRCUIT IN SERIES AND PARALLEL



Source: Deptula, David, *Effects- Based Operations: Changes in the Nature of Warfare*

Last and to sum up his ideas, Deptula sees destruction as one more resource to get control of an enemy. *Destruction should have the purpose of getting effects over enemy systems, not necessarily destroying the system, foreseeing its use according to the enemy's desires*<sup>6</sup>.

This theory was applied, first, by the United States Air Force (USAF) for the selection and assignment of targets in air operations and, later on, due to its effectiveness, it was modified and reached other armed forces.

## EVOLUTION AND INTEGRATION OF EFFECTS- BASED OPERATIONS

According to different authors, the concept of these operations evolved with time and led to the confusion that exists nowadays.

Colonel Guillem Colom Piella states:

*Effects-based Operations, which had started as a new way of selecting targets to be attacked and evolved to an original operational philosophy were then consolidated as a new approach to operations that was part of the different tools at the state's disposal with the purpose of offering a coherent and satisfactory response to any international crisis*<sup>7</sup>.

This led to frame these operations as a new tool in the so-called Revolution in Military Affairs developed in the United States and to group them in the defense policies that appeared in the 90's, such as the Network Centric Warfare, Rapid and Decisive Operations or Rapid Domination<sup>8</sup>.

The inclusion of EBO in other concepts used as a tool for defense policies and concepts which are even more global or general and at national strategic level, gives rise to confusion as to effects-based operations.

Having analyzed the historical and conceptual framework in which confusion of EBO appears, we will try to analyze them from the point of view of the author Edward Smith. This author, in his book *EBO: Applying Network centric warfare in peace, crisis and war*, explains and applies them, in theory, to a systemic process for their use in any type of operations and conflict situations against a certain actor.

Smith tries to reach the concept in an inductive manner, from the definition of terms and he first defines EBO as: a coordinated group of actions aimed at determining the behavior of allies, enemies and neutral persons in times of peace, crisis or war<sup>9</sup>.

6. Galvany, A. op.cit.

7. Guillem Colom Piella, "The evolution of the operational concept based on effects", *Política y Estrategia Journal*, Chile, 2012.

8. According to authors Harlan K. Ullman and James P. Wade, rapid domination is the attempt to affect will, perception and understanding of the enemy to fight or respond to our strategic political purposes through the imposition of the Shock and Pavor regime.

9. Smith, Edward A., *Effects-based Operations: Applying Network Centric Warfare in Peace, Crisis and War*, Washington, DC, Command and Control Research Program, 2006.

*Different commandants applied the general concept that leads them knowing the importance of understanding causal relations of war and considering that destruction of the enemy is not the only way to reach the objective.*

This concept is based upon three general elements:

1. General theory of systems: it was included in the concept of effects, which is clearly represented in the so-called cascade effect, a series of events (whether foreseen or unforeseen) because of an event that affects one component of the system.
2. Effects-based operations may be applied at all levels of war and in all contexts of national power. According to Smith<sup>10</sup>, these levels are not measured by weapons used or targets attacked, but by desired effects.
3. Effects may not only be applied to the physical context (selection of targets), but to the behavioral-cognitive context (psychological). According to Smith<sup>11</sup>, human behavior is the result of a stimulus-response which is not necessarily focused on the destruction of or damage to the enemy. This behavior occurs in the cognitive rather than physical area as when a person reacts to stimulus because understanding the situation and making a decision are processes that are developed in this area of human understanding, the control of the enemy and obtaining effects must occur in the psychological context.

This author analyzes the cognitive cycle, he relates it to effects and proposes a cycle and actions that help understand this concept, a cycle that is implemented in any situation in which EBO need to be applied.

According to Smith, the effect needs to be created so that the observer may get involved in the decision-making process and to react according to what has been expected. This reaction of the enemy is subject to a series of factors such as culture, mental model and experience and training of the observer.

Prediction and analysis of how physical actions cause effects in behavior (that is, results of actions) is the main challenge of the system proposed by Smith and this is the origin of the concept confusion in which effects-based operations are based.

The concept of effects-based operations has evolved and what Colonel Guillem Colom Piela expressed has been shown by different authors who have dealt with the subject.

EBO went from a context that is merely tactical and the material field (represented by the selection of targets), to a national strategic level and, also, the psychological field represented in the fact of inducing behavior (to create the effect) to the enemy strategic conduction.

This method, applied to all power factors, leads to think that operational level becomes less important in decision-making and that planning the solution of conflicts is defined at the highest national level.

We could say that operational level is the mere doer of operations. From a different perspective, execution shall be in charge of a fight for operations between the operational and tactical level.

#### HISTORICAL EXAMPLES FOR APPLICATION

From what has been said, we could state that effects-based operations were applied by different commandants throughout history. Although planning was not subject to a process such as EBO are today, different commandants applied the general concept that leads them to know the importance of understanding causal relations of war<sup>12</sup> and considering that destruction of the enemy is not the only way to reach the objective.

This is the reason why we will try to describe, by means of military operations that have taken place throughout history, the use of some concepts of effects-based operations, without them being systematized and showing their natural existence as an operational concept.

**Battle of Marathon (490 BC).** This is a clear application of the strategy of effects-based operations.

In times which may be considered the origin of strategy, King Dario I from Persia, who at that time had domain over all Asia Minor, in order to punish Athens due to the riot that took place in the region, took his troops to Marathon, located 40 kilometres away from Athens, thus preventing a direct attack to this city.

The strategy consisted in attracting people from Athens to Marathon so that they first leave the city empty. Persians, protected by a security force, would take their vessels again to the army and would then land on the rearguard of the city of Athens.

The plan was more complete, Persians, apart from this movement, had spies in the city and had had negotiations

10. Smith, Edward A., op. cit.

11. Smith, Edward A., op. cit.

12. Humerwadel, J. P., "El Método de Operaciones Basadas en Efectos (OBE) Preguntas y Respuestas". Air & Space Power Journal, 2006.

with the Athens ultra- democratic followers, who opposed the government of those times that would cause a riot, thus leading to general chaos and, also, they would give the signal to disembark Dario's army.

In spite of the fact that the maneuver was not successful for different reasons, we can see a perfect demonstration of an indirect approach strategy so that they adopt an attack attitude to later attack on the smaller expectation and less resistance line, supported by a deceitful maneuver.

We can see how the indirect approach explained by Liddell Hart<sup>13</sup>, finds an example in a battle of ancient times and, also, relates this concept to one of the main principles of EBO which is to try to prevent direct confrontation and produce effects without the decisive battle.

**Malvinas War.** The sinking of the ARA Grl Belgrano vessel is the example with which we try to show the concept of cascade of effects (from the first to third order) which occurred when this war started.

We analyze by means of a chart how this action may have been planned by political- military conduction of the United Kingdom of Great Britain based on effects to be achieved.

On May 2, 1982, the ARA Grl Belgrano vessel was sunk, the order to do this was issued by the highest political level of the United Kingdom according to different sources<sup>14</sup>. Although the reason is not to analyze events that took place or the degree of acceptance of the mission, only and as an example, we express what could the planning by the United Kingdom of navy actions by the Command of the Theater of Operations of the South Atlantic have been.

It is true that in spite of having some imbalance of power of relative combat, Argentina tried direct confrontation with the fleet. The United Kingdom surprisingly, although they had more personnel, did not do that. According to the assumption made in this work, they decided to search for a navy action in the tactical field which not only led to victory on the navy component, but also produced effects at all levels of war conduction.

In Chart No.1, we can see the operations plan of the navy component which included a war of attrition aiming at direct confrontation with the fleet.

However, if we analyze Chart No. 2 which represents an alleged planning based on effects by the United Kingdom, the

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same desired effect was obtained by sinking only one vessel.

The difference between both actions lies in the concept that:

*A method based on effects starts with desired results, the end state, objectives and then determines the necessary resources to achieve them. It does not start with capacities or particular means and then decides what they can achieve with them<sup>15</sup>.*

If we change the order of effects of Chart No. 2 and we start with planning at national strategic level with the search for effects described therein and we keep on planning effects in a decreasing manner at conduction levels according to assumptions adopted and planning based on effects to be obtained, we can conclude that the sinking of a vessel causes all effects expressed.

#### CHART NO. 1 OPERATIONS PLAN NO. 02 "S" "TASKS FORCE 79"

##### Capacities of the ENEMY:

- 1) Isolate the Islands by means of submarines, blocking with surface and air units
- 2) Try recovery
- 3) Exhaust one's own forces

**Mission:** Deplete, neutralize or destroy, in a favorable situation, units of the enemy in order to consolidate the island area, prevent recovery by the opponent and support Military Government actions.

**Navy means:** exhaust, neutralize or destroy, in a favorable situation, surface means of the enemy.

**Air means:** attack surface and air units with conventional weapons and air-surface missiles.

Source: Commission for Analysis and Assessment of Political and Military Strategic Responsibilities in the South Atlantic Conflict.

13. The example was taken from the analysis of the Battle of Marathon that Liddell Hart states in his book *The Strategy of Indirect Approach*.

14. The government of the United Kingdom revealed more than 3500 internal documents in which they see the strategy of the Prime Minister Margaret Thatcher during the conflict of Malvinas Islands and the details of the decision to sink the General Belgrano vessel. Available at <http://www.telam.com.ar/notas/201212/2755>

15. Carey, Steven and Read, Boby, *Five Proposals referring to Effects- based Operations*, 2006. Available at [www.airpower.maxwell.af.mil/apjinternational/apj-s/2006](http://www.airpower.maxwell.af.mil/apjinternational/apj-s/2006)

Although this action would be difficult to be imagined, we cannot avoid identifying the fact that if it had happened in that manner, it is clearly an operation planned based on effects that become effects of first, second and third order, whether direct or indirect, desired and undesired, tactical and strategic and, most importantly, at all levels of war, we are clearly talking about effects- based operations.

The sinking of the ARA Grl Belgrano vessel caused a cascade of effects which have been partially described in Chart No. 2. The most important thing to highlight is the manner in which it was done complying with almost all maxims or principles of what effects- based operations are nowadays.

We only need to ask: could this operation have been planned with any planning method based on effects?

**PLANNING METHODS BASED ON EFFECTS**

Planning methods based on effects are, nowadays, the result of ongoing and complex research in the most different fields of science, such as Mathematics and Psychology.

There is not much information or bibliography available about methods, mainly because they are secret as stated by the states that have them or because they have been developed by companies that do research on defense issues, the knowledge and publishing of which is prohibited for different reasons. In spite of this, some authors have developed the general analysis of how a planning model based on effects has to be implemented in a structured manner and how it has to be applied in

complex situations for the resolution of operational military problems.

The first thing to be taken into account is that effects-based operations are not, on their own, a planning method. They are a concept or philosophy of operation that must be included or designed so as to work “within” a method.

We can make an analogy with operational art and planning method (in which it may be included).

The method proposed by Edward Mann and Gary Endersby, in their publication Thinking Effects Effects-Based Methodology for Joint Operations is a process to carry out planning, execution and assessment of effects- based operations at operational level.

Without trying to explain the whole sequence of the method, the first step focuses on the identification of national targets and relates to the next one, the identification of what factors or national power have the capacity to reach or contribute to the achievement of those objectives, which the main part of the planning process.

Other methods are based on predictive mathematical models and tools to predict the enemy’s behavior which in spite of not being free access software, it is possible to have an idea of how they work in general, such as in the case of the model proposed by Maris McCrabb<sup>16</sup> which is shown in figure No. 2.

The model basically works with an intelligence process of the enemy (IPB). This is a systematic and continuous process for the analysis of threat and environment in a certain geographical area which has the result of determining possible Modes of Action of the enemy.

This Mode of Action of the enemy is subject to confrontation with one’s own Mode of Action, done with the technique of Wars of Game with predictive and statistical models together with the enemy’s behavior models. As a result, we get different parts of actions that may be taken by one’s own force or the enemy’s forces.

Moreover, we have to state that the implementation of this type of planning is of high complexity and requires tools, methods and complex and difficult analysis means.

Despite all of this, we have to say that these methods, tools and means exist nowadays and are used to produce

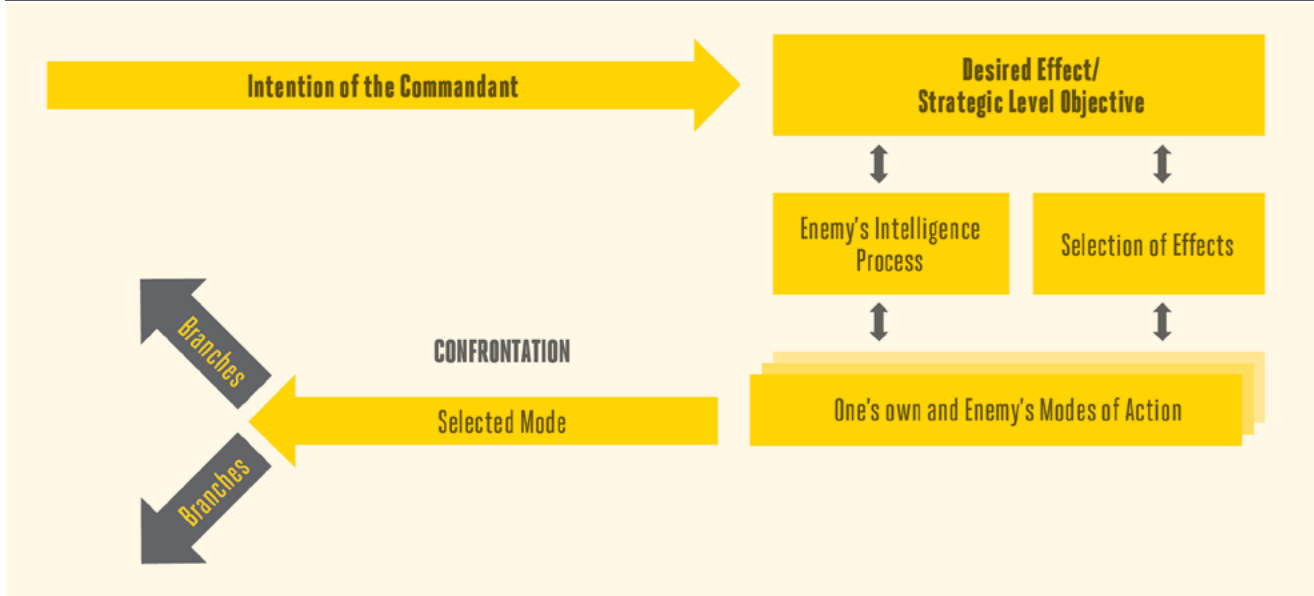
*EBO in their highest degree of evolution include effects in the psychological domain of the opponent, which extends the context of operations to another level, and other types of operations, such as psychological war, appear.*

CHART NO.2 "CASCADE OF EFFECTS"

|  | 1 <sup>st</sup> Order Effect<br>Tactical Level | 2 <sup>nd</sup> Order Effect<br>Operational Level                     | 3 <sup>rd</sup> Order Effect<br>Political Level              |
|--|--|---|--|
| EFFECT                                 | Sinking of ARA Grl Belgrano vessel             | Loss of Tasks Force 70.3  | Induce Argentina to enter this armed conflict                |
|  |  | Loss of Navy Initiative   |  |
|  |  | Delivery of Sea Domain  | Stop diplomatic means  |
|  |  | Logistical Isolation of Island by maritime means                      |  |
|  |  | Withdrawal of the greatest part of the navy component of the conflict | Induce to make wrong decisions due to the desire of reprisal |
|  |  | Morale decline  |  |
|  |  | Distrust among components   | Disorganize national conduction by means of distrust         |
| Loss of strategic exploration capacity |  |   |  |

Source: prepared by the author based on the concept of cascade of effects by Edward Smith.

FIGURE NO.2: "EFFECTS PLANNING MODEL"



Source: adapted from Maris McCrabb, *Effects-based Operations*

effects at all levels of war and to achieve, in this manner, a change in the behavior of the enemy imposing our will.

### COMPARISON, ADVANTAGES AND DISADVANTAGES

In order to make a comparison between effects-based operations and objectives-based operations, we need to first state the differences and similarities between both concepts and define them within a planning context at all levels and, in particular, at operational level.

In order to summarize the concept and to make the first concept comparison with the objectives-based operations, we can see in Figure No. 3 that once desired effects that get the objective have been described, it is possible to identify the tasks that have a close relationship with the desired effects. It is necessary to consider that tasks have a causal link to more than one effect, in fact, tasks may have several causal links to other desired or undesired effects.

On the contrary, objectives-based operations respond to the structure presented in Figure No. 4, in which action directly affects the objective. The approach based on objectives tends to be in line and sequence, the fulfillment of the task contributes to the achievement of the objective subsequently until it is possible to fulfill the objective of the campaign.

The difference is very subtle and requires an integral understanding of the concept of effects. Instead of starting with the planning of the sequence of actions that will move the situation from the current state to the desired future state, planning based on effects starts with the future state and identifies the effects or conditions that define the objective<sup>17</sup>.

This is not done in terms of what tasks must be carried out, but in terms of desired effects. As it was expressed, effects are the results of actions rather than mere actions.

Once identified, it is possible to understand the second difference, which lies in the manner in which desired effects are reproduced at all levels of conflict, thus facilitating the integration of different services and non-military agencies in a common operational context.

This is due to the operation environment in which military and non-military actions occur nowadays, which is complex, changing, and full of uncertainty, in which operations that are carried out in a lineal manner, such as objectives-based operations tend not to solve the problem or to address it in part and sequence.

This is related to the degree of complexity, interrelation and change to which the conflict has reached nowadays. While war is seen as a line and objectives-based operations are ruled by complex systems, focusing on the complexity of parts, effects-based operations are supported by Complex Adaptive Systems<sup>18</sup> (CAS) and focused (apart from recognizing complexity) in the interrelation and power of change of the system components.

16. McCrabb Maris, *Effects-based Operations: Belief, Framing and Mechanism*. Available at: [www.aiai.ed.ac.uk/project/ksco](http://www.aiai.ed.ac.uk/project/ksco)

17. Harris, John T., *Effects-based Operations: Tactical Utility*, Fort Leavenworth, Kansas, 2004.

This cause results (example of the sinking of the ARA Gr1 Belgrano vessel) in the fact that only one action of tactical level affects and has effects at all levels. In the case of objectives- based operations, the task of one level affects only the following level as one task contributes to the other.

In sum, in objectives- based operations, tasks are specific of one objective, in effects- based operations, several tasks are planned and they may have different effects. An only one task may have several effects that lead to more than one objective<sup>19</sup>.

From this comparison, we have the first advantage and disadvantage of EBO.

As an advantage and understanding the concept expressed, we can see the capacity of EBO to be applied to current war, featured by complex and changing systems, in which there is a better possibility to perform due to the number of factors that a planning system has and inter-agency relations, an aspect that is very well developed in this methodology.

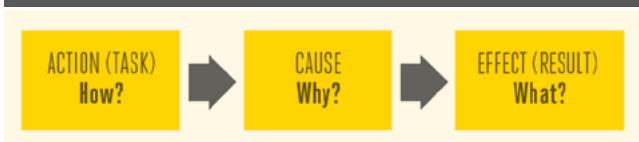
As a disadvantage and conclusion to this first difference between these two methodologies, we can say that EBO require a highly efficient information processing system as analyzing a context of these characteristics is not an easy task that all states can put into practice.

Another difference focuses on the idea that EBO have an approach to ends rather than forms or means. Effects are important rather than the way of doing it or means used.

From the beginning of the discussion about this topic, EBO have always been seen as an alternative as they include objectives- based operations. OBO are included within effects- based operations as destruction is one more way of reaching objectives, although it is not the only or most efficient one.

From this comparison, we can see other advantages and disadvantages that are related to the degree of efficiency and effectiveness of operations and, also, to the options that each method has for the resolution of a problem.

FIGURE NO. 3: "EFFECTS- BASED OPERATIONS"



Source: Figure adapted from Maris McCrabb, Effects- based Operations

FIGURE NO. 4: "OBJECTIVES- BASED OPERATIONS"



Source: Figure adapted from Maris McCrabb, Effects- based Operations

### ***EBO are not a planning method in themselves, but a process of reflection, a group of concepts and a way of thinking.***

Military operations need to fulfill the requirement of efficiency. This is not a word that has been very well defined in the military context. EBO have brought this concept to the planning of military operations as stated by Smith in his work "They must try to achieve their objectives in a more effective manner and then in a more efficient way"<sup>20</sup>.

The appearance of the word "efficiency" is related to what Deputa expressed when he said that the effect, as it may be graded in several levels of effect and areas of application (Physical and Behavioral- figure No. 5), and be achieved with different modes and means, it creates a variety of actions to be able to reach the desired effect.

All of this leads to the fourth and last difference, which is basically that EBO in their highest degree of evolution include effects in the psychological domain of the opponent, which extends the context of operations to another level, and other types of operations, such as psychological war, appear.

Psychological war operations that are little developed in objectives- based operations have been very well defined and systematized in EBO and they are also an important part of their thinking process as well as included in the different effects- planning methods.

From this difference, we may have the last advantage and disadvantage which is the fact that when extending the context of operations to psychological domain, planning methods based on effects find a better application to wars in which this factor is dominant, as irregular, non- conventional and anti- terrorism wars. In sum, there is a greater field of action in fourth generation or asymmetrical wars.

As a partial conclusion, we can say that there are differences between effects- based operations and objectives- based operations, although the most important differences are between effects- based operations.

For this reason, it is important to define how deep or complex effects- based operations system will be implemented in order not to have confusion as it happened in countries that have implemented this in their joint planning methods.

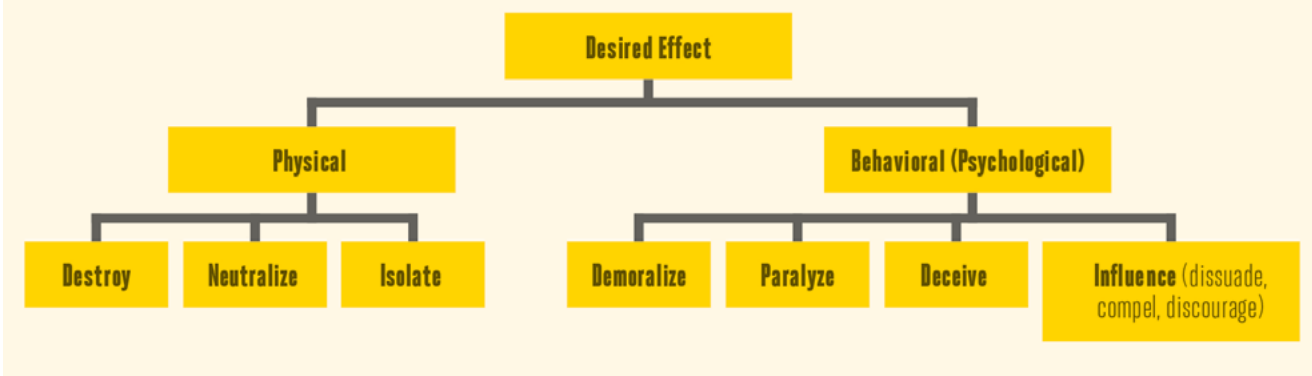
18. Hunerwadel, J. P., op.cit.

19. Kyle, Charles. The Saga of an Effects- based Operation, Kansas, 2008.

20. Smith, Edward A., op.cit., p.25.



FIGURE NO. 5: "PHYSICAL AND PSYCHOLOGICAL EFFECTS"



Source: Rickerman, L., *Effects Based Operations: A new way of thinking and fighting*

## CONCLUSIONS

Effects- based operations have been implemented by different commandants throughout history.

As from the 90's, a deeper research and systematization process started regarding this type of operations in the context of specific and joint operations.

We can state that there is a great difference within EBO between the position that tries to test the psychological field and the creation of effects and the position that focuses effects- based operations as a way to think and design a campaign at operational level according to effects on physical objects.

EBO are not a planning method in themselves, but a process of reflection, a group of concepts and a way of thinking<sup>21</sup> to carry out a campaign. This process of reflection may be implemented by means of planning methods, which are difficult to be implemented and understood due to the causes expressed in this article.

As regards advantages and disadvantages of both concepts under analysis, we can state the following conclusions:

- › The possibility of interaction that EBO presents at all levels of conduction, especially with different state power factors, such as economic, diplomatic, psychological and social power. The result is the search of fulfillment of our objectives in a more systematic and integrated manner, but it also has a more proper field of development in the area of national strategy.

- › The possibility to implement EBO in a broader field or context of operations due to the systemic and conclusive analysis of the enemy and the inclusion of a psychological field of action, which makes it become a more proper method for operations in asymmetrical wars.

In spite of the benefits in the implementation of EBO with respect to objectives- based operations, we need to consider that they also have problems when they are executed, which are mainly based upon their complexity, the need to have an intelligence system and a highly complex and efficient information process.

Last, it is important to state that the application of EBO may improve military operations developed nowadays. To do so, they need to be further analyzed and the process to give them meaning needs to continue so as to take advantage of their advantages and to get the maximum objective of war that is to impose our will to the enemy.

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21. Hunerwadel, J.P., op.cit.