The Efficiency Aspect of Military Effectiveness

War can be seen as a phenomenon that happens in the form of interactions on various scales until one party is defeated or decides to surrender. In this process it is the product rather than the sum of the interactions that decides the outcome. For delivering a good product in war military effectiveness appears to many as an important attribute and as a consequence it deserves close examination.[1]

Lt. Col. Z. Jobbagy*

There is a consensus among scholars that regardless whether military effectiveness is approached in quantitative or qualitative terms, we have to deal with a multitude of difficult-to-calculate factors. Any attempt to describe it means that we limit our attention to certain features and do not focus on the full range of possibilities. Consequently, it always reflects a set of indicators that appears to be strongly interrelated at first sight, but the insights gained are often narrow and highly inconsistent. Attempts to get a grip on it suffer from the proverbial friction of war and the problem of no clear causality, which can never be eliminated. Even if we can establish causal links between military effectiveness and the variables it feeds upon, the only possible way for this is that we restrict the dependent variables and narrowly define the sort of effectiveness we mean. Friction of war stands for events that can have both systematic and accidental causes, and for phenomena humans cannot explain or understand based on analytical rationality. The result is that any judgement regarding military effectiveness colours as much the view of events as limits the attention since we always include certain aspects and exclude others.[2]

Assumptions regarding military effectiveness are as much permissive as deterministic/heuristic. Measures often reflect the sum of individual aggregates rather than collective characteristics. Military effectiveness cannot be addressed directly, and similar to any abstract concept, it must be inferred from other clues. The more we move towards the high-end of war, the harder it becomes to disentangle indicators and variables. Consequently, any attempt to addresses military effectiveness has to deal with *collective attributes* and not *aggregate results.*[3]

Fighting power as expression

The ability to achieve effects is central for being militarily effective. Military effectiveness can theoretically be addressed on every level of war. Effects can be achieved on the strategic,

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1   For simplicity's sake we use the term war for all sorts of armed confrontations/military operations/armed conflicts. Smith, Alistair: Fighting Battles, Winning Wars, Journal of Conflict Resolution, Volume 42, Number 3, June 1998, pp. 301-305; Brooks, Risa A. / Stanley, Elisabeth A. (eds.): Creating Military Power, The Sources of Military Effectiveness, Stanford University Press, 2007; Pollack, Kenneth M.: Arabs at War: Military Effectiveness, 1948-1991, University of Nebraska Press, 2002.

2   Liddel Hart, B. H.: The Ratio of Troops to Space, In. Military Review, April 1960, p. 9; Elkins, David J./Simeon, E. B.: A Cause in Search of its Effect, or What Does Political Culture Explain?, In. Comparative Politics, January 1979, pp. 127-137.

3   Schnaubelt, Christopher M.: Can the Military's Effectiveness in the Drug War be Measured? In. The Cato Journal, Volume 14, Number 2, Fall 1994, Internet, accessed 12. 05. 2006, available at www.cato.org/pubs/journal/cjv14n2-5.html.

operational and tactical levels. Whereas psychological effects refer mostly to the strategic level, systemic effects address the operational, physical effects the tactical levels of war. Physical effects appear mostly in the form of destruction and are relevant only to the extent they contribute to changes in enemy behaviour. In other words they are mostly of secondary importance. Psychological effects on the other hand are sophisticated and not easy to achieve. These effects are mostly follow-on, higher order consequences. They are difficult to address directly and need longer time to come to light.

Given the limitations of the strategic and tactical levels for discussing military effectiveness, we suggest its examination on the operational level. Here the essence of military effectiveness can best be grasped by the concept of *fighting power,* as in most cases winning wars comes as a result of winning battles. Although this way we do not address the relationship between political ends and military means, it conveniently provides for the fact that waging war is the real test of military effectiveness. The biggest benefit of focusing on the operational level of war is that in this way we do not confuse military agility with political flexibility.[4]

Fighting power as an expression of military effectiveness indicates that disastrous battlefield performance often comes as a result of various societal and cultural factors. They root in the absence of respect, trust and openness, and the lack of an implicit brotherhood among soldiers. However, winning battles on the operational level is an important contributor to victory in which individual soldiering, battlefield behaviour, and organisational performance play an important role.[5] Cultural and societal attributes thus imply that low effectiveness of some armed forces in the second half of the 20th century is mostly due to such determinants. Among others indicators can include over-control in the form of rigidly centralised command structure, the officer corps's contempt for ordinary soldiers, and its distrust of a capable NCO corps. Societal

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Not only fighting power, but also societal and cultural factors seem to define the outcome of war

and cultural deficiencies for example are often seen as responsible for the humiliating defeats Arabic forces suffered at the hand of Israel.[6]

Fighting power represents first and foremost the human aspect of war, which requires solid and strong bonds in combat units rather than the availability of advanced technology. The latter "only emerges as a powerful predictor of success when considered in a far more complex and interactive model of training, technology, and terrain."[7] Fighting power as an expression of military effectiveness indicates that favourable technological disparity might erode over time.

4 Record, Jeffrey: Sizing Up Military Effectiveness, In. Parameters, December 1988, pp. 25-29.

5 Atkine, Norville de: Why Arabs Lose Wars, In. MERIA Journal, Volume 4, Number 1, March 2000, Internet, accessed 12. 05. 2006, available at www.meria.biu.ac.il/journal/2000/issue1/jv4n1a2.html; Biddle, Stephen/Long, Stephen: Democracy and Military Effectiveness, A Deeper Look, In. Journal of Conflict Resolution, Volume 48, Number 4, August 2004, p. 527.

6 Harkabi, Yehoshafat: Basic Factors in the Arab Collapse During the Six-Day War, In. Orbis, Fall 1967, pp. 685-691; Lewis, Bernard: The Arab-Israeli War, The Consequences of Defeat, Foreign Affairs, 1968, Volume 46, January, pp. 331-334.

7 Reiter, Dan/Stam, Allan C. III.: Democracy and Battlefield Effectiveness, In. Journal of Conflict Resolution, Volume 42, Number 3, June 1998, pp. 260-263, 271-275 (quotation p. 274).

Ancient Greeks and modern Germans

Military effectiveness has always been important in war. In Xenophon's book *Anabasis* despite all odds the Greeks kept winning on their march back home as they consistently outperformed their respective enemies.[8] The Germans did something similar 2,500 years later in World War II. During the entire war period, on a one-to-one comparison soldiers of the *Wehrmacht* always outfought the opposing British and American troops. This was true "when they were attacking and when they were defending, when they had a local numerical superiority and when... they were outnumbered, when they had air superiority and when they did not, when they won and when they lost."[9]

Explaining such an outstanding performance by single attributes appears to be narrow and dangerous. A German made neither a better

There seems to be an emerging gap between advanced military technology and the gains from its application

soldier than an American, nor is German national character more suitable to wars than British. It should not come as a surprise that the involvement of various difficult-to-conceptualise factors has lead many to state that military effectiveness is nothing more than an ill-defined concept. War is a complex phenomenon in which the multitude of factors does not make it possible to fully comprehend everything that goes on. Any interaction with the enemy results in causality break-down and we face different levels of intensity and a confusing interdependency. Discussing military effectiveness even in rough terms such as fighting power requires that we look across various sorts of activities.[10]

Ancient Greeks and modern Germans regarded themselves as members of a highly integrated and well-led team perceived by-and-large as just and equitable. This implicit brotherhood meant that the best men fought shoulder-to-shoulder in the front producing fighting men of high quality. In both instances fighting power came as a result of soft factors such as mutual trust, delegated responsibility and independent decision-making. Both Xenophon's Greek mercenaries and soldiers of the Wehrmacht did not attempt to prescribe detailed solutions in advance. Much was left to the *intuition* of commanders and subordinates on the ground. This led to empowerment throughout the ranks as the emphasis on the *means* instead of the *objectives* resulted in frightening military effectiveness. They displayed fearsome cold-bloodedness: the Greek *hoplite* and the German *landser* were true professionals as their fighting power was second to none.[11]

Fighting power as an expression of military effectiveness depends largely on the humans involved and reflects the ability to prosecute operations and employ weaponry. It represents the quality of an army's personnel and includes aspects that range from battlefield performance to the accomplishment of tasks on various levels, and the way those tasks interrelate. Fighting power expresses how successfully a military force operates on the battlefield once it has engaged with the enemy.[12]

The case of the Greeks and the Germans made it clear that fighting power is the expression of superior human qualities rather than outstanding military technology. Another good historical example for disappearing techno-

8   Xenophon: Anabasis, Harvard University Press, 2001.

9   Dupuy, T. N.: A Genius for War, Macdonald and Jane's, 1977, pp. 253-289 (quotation pp. 253-254).

10   Millet, Allan R./Murray, Williamson/Watman, Kenneth H.: The Effectiveness of Military Organizations, In. Millet, Allan R./Murray, Williamson (eds.): Military Effectiveness, Volume I: The First World War, Allen & Unwin, 1988, pp. 1-2; Parker, Christopher S.: New Weapons for Old Problems, Conventional Proliferation and Military Effectiveness in Developing States, In. International Security, Volume 23, Number 4, Spring 1999, p. 131; Creveld, Martin van: Fighting Power, German and U.S. Army Performance, 1939-1945, Greenwood Press, 1982, pp. 13-16; Nielsen, Suzanne C.: Civil-Military Relations Theory and Military Effectiveness, In. Public Administration and Management, Volume 10, Number 2, 2005, pp. 61-84.

11   Millet/Murray/Watman In. Millet/Murray, p. 2; Creveld (1982), pp. 163-166; Kanter, Rosabeth Moss: Strategy as Improvisional Theater, In. MIT Sloan Management Review, Winter 2002, p. 79.

12   Millet/Murray/Watman In. Millet/Murray, pp. 26-27; Pollack, pp. 3-4.

logical superiority, both in terms of quantity and quality can also be found in the first phase of British imperialism. Around the end of the 18th century some thousand British soldiers were able to defeat much larger Indian armies, despite the fact that in war-relevant technologies, India was superior to Europe. Indian steel was not only better than British, but the steel making techniques in India were far more advanced. Indian forces also had better artillery and musket barrels on their side. However, technological inferiority did not hinder the British to expand their empire and extend their influence.[13]

The basic principle not to prescribe detailed solutions in advance contributed to the effectiveness of the Wehrmacht

The human aspect of war does not indicate that with the application of advanced technology such as stealthy platforms and precision weaponry we cannot destroy any target both in the air and on the ground. However, we increasingly observe an emerging gap between advanced military technology and the gains we can expect from its application. Enhanced destructive capabilities can improve fighting power and military effectiveness, but they also have clear limitations. War's unpredictability comes from many unforeseeable events, which cannot be negated by advanced technology.[14]

Measuring on the operational level

Fighting power is not only manifest in combat on the operational level, but also determines its outcome. The question of whether it is possible to quantify this level of war arises naturally. In his attempt to identify a useful theory of combat, Dupuy referred to Clausewitz and claimed that he had an analytical approach to war and thought of combat in mathematical and quantitative terms.[15]

Certainly, it is true that Clausewitz used a vocabulary that was interwoven with terms and expressions borrowed from various natural scientific disciplines. It is also true that Clausewitz referred to various measures throughout his work such as scale, degree or quantity to which, according to Dupuy, at least tentative values can be given and expressed as the *Law of Numbers*. This law makes it possible for him to determine the outcome of battles, hence to measure fighting power and military effectiveness. For Dupuy fighting power (P) was the product of the number of troops (N), variable circumstances that affect a force in battle (V), and the quality of the force involved in battle (Q). Consequently, he claimed that fighting power can be seen as a result of the following equation

$$P = N * V * Q$$

13 Rosen, Stephen Peter: Military Effectiveness, Why Society Matters, In. International Security, Volume 19, Number 4, Spring 1995, pp. 22-23.

14 Valentin, Marcel (Gen.): Military Effectiveness in the Face of Terrorism, In. Le Figaro, Monday 23 January 2006, translated by Leslie Thatcher, Internet, accessed 21. 03. 2006, available at www.truthout.org/cgi-bin/artman/exec/view.cgi/48/17158.

15 Dupuy, T. N. (Col.): Understanding War, History and Theory of Combat, Leo Cooper, 1987, p. 13 (Dupuy preferred the term combat power).

According to him the equation also makes it possible to express relative military effectiveness in the case of two belligerents. We can comprehend it as a difference in the belligerents' respective military effectiveness where (r) identifies the red force and (b) the blue force:

$$P = \frac{N_r * V_1 * Q_r}{N_b * V_h * Q_b}$$

In his approach Dupuy explicitly emphasised the importance of a bottom-up, inductive process in approaching military effectiveness. He assumed that this way it becomes possible to provide insights into the various interactions of the variables and get to a reasonable quantification. However, even he had to admit that the best the equation can provide for is the avoidance of dangerous assumptions and false conclusions. In the end Dupuy failed to measure fighting power and quantify soft factors such as leadership, morale, cohesion, motivation, initiative, and trust. These factors, similar to others mentioned earlier such as respect, trust, openness, brotherhood, responsibility and independent decision-making, are so easily identifiable, but frustratingly intangible. The best he could do was to suggest that the effects of intangibles should be determined by historical analysis.[16]

As Dupuy's example shows even the attempt to assess military effectiveness in the internal and rather limited context of combat expressed as fighting power, suffers from inaccessibility of reliable data. Consequently, it should not come as a surprise that various measures of military effectiveness such as *battle damage assessment* can at best be related to physical activities on the tactical level as even fighting power on the operational level of war is most difficult to grasp.[17]

Measuring, control, and feedback

In simple English measuring stands for a process that points toward a comparison in which we ascertain a certain quantity in terms of a given standard. However, the evaluation of the effectiveness of recent wars found that despite the obvious success of bombings, the destruction of various sites never fully equalled with the destruction of the enemy's assumed centres of gravity. Fighting power as an expression of military effectiveness cannot be comprehended as some sort of military exchange rate based on technological prowess. There are so many contextual factors at play that the relationship between the action taken, the object selected, and the consequence in the form of desired effects will always be hidden to a given degree.[18]

But then, why do we attempt to measure military effectiveness? The answer is simple: Western thinking, in general, is inherently linear and obsessed with effects. This is manifest in its preoccupation with numbers, which are often regarded as the only reality instead of as the means to look at reality. Numbers allow for management and something that is seen in Western culture as most important: *control*. Numbers and metrics are regarded as hard facts and number crunching as the primary means of control. Unfortunately, controlling anything in war is very difficult if not impossible. Fighting power depends mostly on human performance and expresses capabilities that can never be reproduced by simple measurement. Military effectiveness emerges as a result of qualities and behaviours that are choices made by people.

16 Ibid., pp. 21-30, 51-61, 105; Murray, Williamson: Thoughts on Effects-Based Operations, Strategy, and the Conduct of War, Institute for Defense Analysis, January 2004, pp. 5-17; Burkett, Wendy H.: Assessing the Results of Effects-Based Operations (WBO): The Relationship between Effects-Based Operations and the Psychological Dimension of Warfare, US Army War College, 07 April 2003, pp. 10-17.

17 DuBuis, Edmond/Hughes, Wayne P. Jr./Low, Lawrence J.: A Concise Theory of Combat, Institute for Joint Warfare Analysis, Naval Postgraduate School, October 1998, Internet, accessed 19. 05. 2005, available at www.militaryconflict.org/Concise%20Theory.htm; Low, Lawrence J.: Anatomy of a Combat Model, Review Copy, pp. 18-23, Internet, accessed 19. 05 2006, available at www.militaryconflict.org/Anatomy%20of%20a%20Combat%20Model_1.

18 Gove, Philip B. (ed. i. ch.): Webster's Third New International Dictionary of the English Language, Unabridged, Merriam-Webster Inc., 1981, p. 1400; Cordesman, Anthony H.: The Military Effectiveness Of Desert Fox: A Warning About the Limits of the Revolution in Military Affairs and Joint Vision 2010, Center for Strategic and International Studies Paper, 26 December 1998, pp. 29-31; For an excellent review regarding the effectiveness of the 1991 Gulf War see Keaney, Thomas A.: Surveying Gulf War Airpower, In. Joint Force Quarterly, Autumn 1993, pp. 25-36.

The example of the Greeks and the Germans made it clear that military effectiveness comes as much as the result of satisfying the superiors' needs as that of local knowledge and expertise understanding the situation. The link between the two is called *feedback*. Probably the biggest difference between feedback and measuring is that the former is self-generated and depends on context. Feedback in war changes constantly over time as nothing is ever static, but changes dynamically. For military effectiveness it indicates that instead of letting measures define what is meaningful, the emerging meaning of our actions should define the measures.[19] Feedback is essential for fighting power as it stands for the interaction of the belligerents. It indicates that in military effectiveness the means applied are as much important as the ends sought, and we can never be fully in control of events. As Clausewitz emphasised war is never "the action of a living force upon a lifeless mass. … Thus [we are] not in control: [the enemy] dictates [to us] as much as [we] dictate to him."[20]

Wicked problems amass in war

Greek and German fighting power makes it clear that the traditional *planning* approach emphasising reasoning, rationality and analysis must often yield to a more organic *feeling* approach standing for engagement, action and overcoming. Also the difference between measuring and feedback indicates that we always have to juggle with conflicting constraints. In war there are waves of repercussion and we must expect severe and unexpected effects everywhere. It appears that our attempt to get a grip on military effectiveness might reflect nothing more than an arrogant confidence in detecting *root causes* or *ground truth*.[21]

Most problems regarding military effectiveness come from the nature of war, which is *wicked*. The lack of clarifying traits in such problems allows for *resolution* rather than *solution* – over and over again. It is important to know that wicked problems cannot be formulated definitively and exhaustively since formulating a

wicked problem is a problem in itself. Setting up and constraining the solution space, and constructing meaningful measures of performance are at the heart of the problem. Wicked problems are infinite as there are no criteria that can tell when solutions are found. Terminating works are rather due to external reasons such as running out of resources rather than to internal ones coming from the logic of the problem. Wicked problems do not allow for objectively decisive criteria to define the correctness or falseness of solutions, which can never be *true* or *false* only *bad* or *good*. Wicked problems have no solutions that can be tested

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Physical effects like destruction can change the enemy's behaviour, but psychological effects can be much harder to achieve

immediately or ultimately. The solution itself generates unintended and undesired consequences, which often outperform the desired effects we want to achieve.[22]

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19 Gove, p. 1400; Wheatley, Margaret/Kellner-Rogers, Myron: What Do We Measure and Why? Questions about the Uses of Measurement, In. Journal for Strategic Performance Measurement, June 1999, Internet, accessed 19. 05. 2006, available at http://www.margaretwheatley.com/articles/whymeasure.html; Murray, William S.: A Will to Measure, Parameters, In. Autumn 2001, pp. 134-135; Janssen, Heidi J. W./Toevank, Freek-Jan G./Smeenk, Belinda J. E./Voskuilen, Marion J. M.: Psychological Operations, Considerations on its Measurement of Effectiveness, TNO-FEL Concept Paper, 09. 11. 2003.

20 Quotation in Clausewitz, Carl von: On War, Everyman's Library, 1993, p. 86.

21 Rittel, Horst W./Webber, Melvin M.: Dilemmas in a General Theory of Planning, In. Policy Sciences, 4/1973, pp. 157-158, 160-167.

22 Ibid., pp. 160-162.

Wicked problems mean that history matters. Every solution that is implemented has a consequence that leaves traces we cannot reverse. Attempts to undo or reset past actions induce a significant challenge and contain further sets of wicked problems. Wicked problems do not have an enumerable set of potential solutions. Sometimes no solution can be found, or the selected solution is just as good, as any other potential solution. What should be pursued, implemented and enlarged is a matter of *subjective* judgement. Wicked problems are essentially unique. They always yield a distinguishing property of importance since there are no classes that allow for principles of solutions fitting to all members of a class. Despite obvious similarities there is no certainty about the particulars of any given problem. Wicked problems are always a symptom of other problems. Addressing the problem at any given level can never be decided logically since there is no *natural level* (or root causes, or ground truth). Even systemic and comprehensive approaches can often make things worse, rather than better.[23] Wicked problems can be explained in numerous ways since there is no rule that determines which explanation is correct. Thus the choice of explanation is arbitrary and guided by *attitudinal* criteria since people generally choose those explanations that are most plausible to them to comprehend the problem itself. Wicked problems stand for ambiguity of causal webs in which solutions always point towards further sets of dilemmas. Actions always generate consequences and the effects, regardless whether desired, undesired, intended, unintended, good or bad matter a great deal to those who are affected.[24]

The history of warfare is full of examples that as soon as a war starts, it develops according to its own momentum. This attribute often renders the original meaning of effectiveness obsolete and erects new imperatives. Consequently, any approach to military effectiveness can be scarcely more than an attempt to grasp a continual and kaleidoscopically shifting process. Military effectiveness stands for the fact that we emphasise a predefined end-state, top-down command and control, and a slavish

PHOTO U.S. ARMY

History shows that as soon as a war starts, it develops according to its own momentum

adherence to various measures. This however, means that we impose demands upon armed forces they might not be able to meet. Also in terms of fighting power we must acknowledge that outcome is defined as much by various objectives pursued by the military, as by acknowledging the limitations of militarily realisable objectives.[25]

Fighting power and the human dimension of war indicate that an exclusive focus on the accomplishment of objectives narrows exploitable options with the consequence that we become imprisoned in false hopes chasing desired effects. The problem of grasping

23   Ibid., pp. 162-164.
24   Ibid., pp. 164-167.
25   Weigley, Russell F.: The Political and Strategic Dimensions of Military Effectiveness, In Millet, Allan R./Murray, Williamson: Military Effectiveness, Volume III: The First World War, Allen & Unwin, 1988, pp. 341-344.

military effectiveness reflects a dangerous development. Due to the Western bias toward the instrumental dimension of war we cannot see and address international security problems other than in quantitative and technological terms. This explains why traditional attributes of war such as uncertainty, risk and ambiguity have increasingly disappeared from the vocabulary, or have been buried under fashionable but empty concepts such as *shock and awe*, *rapid decisive operations*, or *effects-based operations*. The ignorance of the human aspects of war and the resulting mechanistic approach explain why force employment concepts offering "quantitatively guaranteed predictive capabilities with respect to human affairs" could become an all encompassing credo at the beginning of the 21st century.[26]

Effectiveness and efficiency

The problem of military effectiveness also points toward a dangerous simplification of war and the only logical outcome can be nothing else than panaceas that promise quick, easy and cheap victories. War is an open-ended dynamic process in which often the best we can do is to act on local information, learn from mistakes and hope that a better mix of training, leadership, equipment and weaponry can result in victory. Fighting power stands for the importance of learning and adaptation, and the need to harmonise effectiveness with *efficiency*. Although even a successful combination of both does not allow for perfect solutions, it can guarantee that we do not fall out of alignment in terms of external demand and internal variation. Being effective and efficient at the same time roughly means doing the right things right, or at least, doing the right things better or faster than the enemy. This way we can successfully combine the *science* and the *art* of war. Taking efficiency equally into account also helps us better address those human attributes that eventually can turn even technological weakness into an exploitable advantage in war.[27]

Although effectiveness and efficiency complement each other, in normal English usage there is a significant difference between them. Effectiveness stands for the quality of being able to achieve an effect or the ability of becoming effective. It has a general meaning since it describes only the power to carry out an act that has a certain result. Effectiveness suggests the accomplishment of a desired result especially as viewed after the act. Efficiency stands for the capacity to produce a certain desired result with a minimum expenditure of resources. It has a more specific meaning as it describes the suitability of a given procedure. Efficiency stands for being the immediate agent in producing an effect. It suggests an action or a potential for an action in such a way as to avoid loss or waste of energy in producing a result.[28]

The biggest difference between the two is that whereas effectiveness stands for the power to produce an effect, efficiency describes the process of producing an effect. The following simple comparison may explain the fundamental difference between the two.[29]

$$\textbf{Effectiveness} \ = \ \frac{\text{Realised Output}}{\text{Desired Output}}$$

$$\textbf{Efficiency} \ = \ \frac{\text{Realised Output}}{\text{(Desired) Output}}$$

In the framework of the equations above, effectiveness gives information about what kind of end-state is achieved and forces us to think more precisely about what we want. Efficiency can be regarded as the relation between input and output, representing how the end-state is achieved. As the example of the

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26 Coker, Christopher: Waging War Without Warriors, The Changing Culture of Military Conflict, IISS Studies In International Security, Lynne Rienner Publishers Inc, 2002; Murray, Williamson: Clausewitz Out, Computer In, Military Culture and Technological Hubris, In. The National Interest, Summer 1997, Internet, accessed 15. 05. 2006, available at www.clausewitz.com/CWZHOME/Clause&Computers.html.

27 Murray, Williamson: Military Culture Does Matter, Strategic Review, Spring 1999, pp. 32-40; Scales, Robert H. Jr.: Adaptive Enemies, Achieving Victory by Avoiding Defeat, In. Joint Force Quarterly, Autumn/Winter 1999-2000, pp. 7-14.

28 Gove, p. 725.

29 Snowden D.: Being efficient does not always mean being effective, a new perspective on cultural issues in organisations, Internet, accessed 21. 11. 2006, available at www. cognitive-edge.com/ceresources/articles/42_new_perspective_on_culture_final.pdf, p. 3.

Greeks and the Germans display in terms of fighting power effectiveness and efficiency are *interconnected* phenomena. They are not mutually exclusive alternatives that can be treated only within their own domain of applicability, but fundamentally interdependent. Consequently, they are not conflicting perspectives or complementary views, but two interrelated processes of change.[30]

Conclusion

The process of delivering a good product in war as written in the beginning requires that we are rigid enough to organise change, but not too rigid to prevent change. Effectiveness and efficiency indicate that often the central challenge in military operations is to manage change. Accepting surprise, making moves, observing the results and continuing with the ones that seem to work appear to be inherent features of war. There is simply too much going on in war, which does not allow every move to be orchestrated from the top, but often requires uncontrolled and parallel actions. Combining effectiveness with efficiency means that we are ready to look beyond causal assumptions. The Greeks and the Germans successfully merged the competence of higher-level leadership with empowered individuals on lower levels who had access to local information and best understood the situation. This way they eliminated unnecessary constraints and were able to exploit uncertainty and complexity to their advantage.[31]

This all requires an atmosphere that promotes agility, information sharing and peer-to-peer relationship in which everyone is empowered to do what makes sense. It is important to redefine the individual, the relationship between the individual and others, and between the individual and the organisation. This way it becomes possible to successfully allocate responsibilities and resources. In the case of the Greeks and the Germans often the particularity of time, place and the task defined who had to take charge.[32]

Does this mean that there is no longer a distinction between those who lead and those who are led? Leadership will still play an essential role in military operations, but "instead of fusing individuals into a mass through the suppression of their individuality and the contraction of their thought, the lead … only has effect, lightning effect, in proportion to the elevation of individuality and the expansion of thought. For collective action it suffices if the mass can be managed; collective growth is only possible through the freedom and enlargement of individual minds. It is not the man, still less the mass, that count; but the many."[33] A successful combination of effectiveness and efficiency can prevent that "bad means deform the end, or deflect the course thither"; therefore the only thing left possible is to acknowledge that in terms of military effectiveness "if we take care of the means the end will take care of itself."[34] In a similar fashion also Helmuth von Moltke emphasised that "[i]n war it is often less important what one does than how one does it."[35] ∎

30 Merry, Uri: Organizational Strategy on Different Landscapes: A New Science Approach, In. Systemic Practice and Action Search, Volume 12, Number 3, 1999, pp. 257-259; Daniel A.: Organizational Adaptation and Environmental Selection – Interrelated Processes of Change, In. Organization Science, Volume 2, Number 1, February 1991, pp. 140-145; Courtney, Hugh: Making the Most of Uncertainty, In. The McKinsley Quarterly, Internet, accessed 22. 03. 2005, available at http://www.mckinseyquarterly.com/article_abstract.aspx?ar=1128&L2=21&L3=37&srid=10&gp=1.

31 Brown, Shona L./Eisenhardt, Kathleen M.: Competing on the Edge, Strategy as Structured Chaos, Harvard Business School Press, 1998, pp. 7-15; McGill, Michael E./Slocum, John W.: The Smarter Organisation, How to Build a Business that Learns and Adapts to Marketplace Needs, John Wiley & Sons, 1994, pp. 85-86.

32 Alberts, David S/Hayes Richard E.: Power to the Edge, Command and Control in the information Age, CCRP Publication Series, June 2003, pp. 5-6, 175-177, 179-200, 213-222, 223-231; Krulak, Charles G. (Gen.): The Strategic Corporal: Leadership in the Three Block War, In. Marines Corps Gazette, Volume 83, Number 1, January 1999, Internet, accessed 16. 08. 2005, available at www.au.af.mil/au/awc/awcgate/usmc/strategic_corporal.htm; Fast, William R.: Knowledge Strategies: Balancing Ends, Ways, and Means in the information Age, In. Neilson, Robert E. (ed.): Sun Tzu and Information Warfare, A collection of winning papers from the Sun Tzu Art of War in Information Warfare Competition, National Defense University Press, 1997.

33 Liddel Hart, Basil H.: Through the Fog of War, Faber and Faber Ltd., 1938, p. 356.

34 Ibid., p. 357.

35 Quotation in Howard, Michael: The Influence of Clausewitz, in: Clausewitz, p. 33.