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On Operational Art

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Abstract

The main purpose of any combat is to achieve a quick and decisive result and thereby avoid high losses in personnel and materiel. The enemy can be defeated by weakening his forces over time. However, such an approach to warfare would generally lead to high losses and require a lot of time. The gap between tactics on one hand and strategy and policy on the other cannot be overcome by physical combat alone. The tactical framework is too narrow to ensure the most decisive of one's forces. This is the main reason for the need for an intermediate field of study in practice between strategy and tactics known as operations or operational art. This third component of art of war serves as both a bridge and an interface between policy and strategy on the one hand and tactics on the other. Generally, the smaller the forces, the more critical is to apply operational art properly. The history of past wars has demonstrated that neither superior technology nor superb tactics can ensure, by themselves, victory in a war.

Key words:

combat, component of military art, doctrine, employment, deployment, grand tactics, joint doctrine, logistical support, materiel, military strategy, objective, operatika, operational art, operational brilliance, operational commander, operational level, operational objective, operations, policy, service doctrine, strategic level, strategic objective, strategy, tactical brilliance, tactics, technological advances, technological superiority, terminology, terms, warfare

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Sažetak

Glavna svrha bilo koje oružane borbe je postići brz i odlučujući rezultat i time izbjeći velike gubitke u osoblju i opremi. Neprijatelj može biti poražen slabljenjem njegovih snaga tijekom vremena. Međutim, takav pristup ratovanju općenito bi doveo do velikih gubitaka i zahtijeva mnogo vremena. Jaz između taktike s jedne strane i strategije i politike s druge strane ne može se nadvladati samo fizičkim aspektom oružane borbe. Taktički okvir preuzak je da bi se dobilo najodlučnije od svojih snaga. To je glavni razlog za potrebu za prijelaznim područjem studija u praksi između strategije i taktike, poznatog kao operacije ili operativno umijeće. Ova treća sastavnica ratnog umijeća služi i kao most i kao područje dodira politike i strategije s jedne strane i taktike s druge strane. Općenito, što su nečije snage manje, to je kritičnije ispravno primijeniti operativno umijeće. Povijest prošlih ratova pokazala je da ni vrhunska tehnologija ni izvanredna taktika ne mogu samostalno zajamčiti pobjedu u ratu.

Ključne riječi:

borba, sastavnica vojnog umijeća, doktrina, uporaba, razmještaj, velika taktika, združena doktrina, logistička potpora, oprema, vojna strategija, cilj, operatika, operativno umijeće, operacijska izvrsnost, operacijski zapovjednik, operativna razina, operacijski cilj, operacije, politika, granska doktrina, strateška razina, strateški cilj, strategija, taktička izvrsnost, taktika, tehnološki napredak, tehnološka nadmoć, terminologija, termini, ratovanje

The main purpose of any combat is to achieve a quick and decisive result and thereby avoid high losses in personnel and materiel. The enemy can be defeated by gradually weakening his forces over time or by conducting attritional warfare. However, such an approach to warfare would generally lead to high losses and require extraordinary long time. Any war is a combination of decisive operations and attrition. The key for shortening a war is to avoid attrition at the operational and strategic level. The tactical framework is too narrow to ensure the most decisive employment of one's forces. Hence, the need for another component of military art known as *operations* or *operational art*. This component occupies and intermediate position between strategy and tactics.

The results of tactical actions are useful only when linked together as part of a larger design framed by strategy and orchestrated by operational art.

Problems of Terminology

In contrast to strategy and tactics, there is much confusion about what constitutes the third component of the art of war or operational art. In the past, many different terms were used in referring directly or indirectly to operational art. The problem is compounded by a lack of agreement on the real purpose of operational art. In the past, the terms *grand tactics* and *operations* referred to what is today known as operational art. A well-known and influential French general, Count Jacques Antoine Hippolyte de Guibert (1743–1790), is credited as the first to use the term grand tactics. For General Antoine-Henri de Jomini (1779–1869) the art of war consisted of five distinct parts, including grand and minor tactics (Jomini, 1992:p. 13). He defined grand tactics as "the art of making good combinations preliminary to battles, as well as during their progress. The guiding principle in tactical combinations, as in those of strategy, is to bring the mass of the forces in hand against a part of the opposing army, and upon that point the possession of which promises the most important results" (Jomini, 1992: p.178). Jomini used the term *minor tactics* for what is today commonly understood as tactics.

The British general J.F.C. Fuller (1878–1966) wrote prolifically about the theory of operational warfare. Like Guibert and Jomini, he used the term grand tactics in referring to the intermediate field of study and practice between strategy and tactics. Fuller wrote that, once the grand strategist has correlated and adjusted one's forces to the political object, the next step is to endow them with structure so that they can be operated, and this is the duty of the grand tactician. The grand tactician assumes control of the forces as they are distributed and arranges them according to the resistance they are likely to meet. This arrangement constitutes the plan of the war or campaign, and if the spirit of the plan is the political object, then the heart of the plan is the military object (Fuller, 1925: p.107).

After 1866, Field Marshal Helmuth von Moltke the Elder (1857–1888), the chief of the Prussian/German great general staff, used the term *operation*

(ger. *Operation*) in referring to the still-emerging level of military art between strategy and tactics. He used that term (ger. *Schlacht*) almost exclusively to mean the movement of large forces before a major battle (Wieker, 1987:p. 8; English, 1996:p.8; Sodenstern, 1953:p.53; Besterhorn, 1999:p.7). In his view, a major battle was a matter of strategy. Moltke the Elder also introduced into German military theory the term *operativ* (loosely translated as *operational*), pertaining to an operation (Ilsemann, 1988: p. 22). Moltke the Elder as chief of the great general staff was solely responsible for the conduct of operations, that is, the execution of the campaign plan and war plan (Greiner, 1965:p.394). By the late 19th century, operations had emerged as an intermediate area of study and practice in the German military (Hanisch, 1998:p.4; Förster, 1993:pp.254–255). An operation pertains to an army's deployment between the initial deployment and the tasks aimed at resolving a major battle (Sodenstern, 1953:p.54). In the German-speaking militaries, other terms used alternatively today are *operational leadership* (ger. *Operative Fűhrung*) and *control of operation* (ger. *Operationsfűhrung*).

By the turn of the 20th century, Russian theoreticians used the terms grand tactics and applied strategy in referring to the intermediate level between strategy and tactics. They were much influenced by the writings of Moltke the Elder and his interpreters (Kipp, 1987:p.5). In 1907, based on the experiences of the Russo-Japanese War of 1904–1905, the Russians introduced a new term, *operatika* (pertaining to operations), to explain the new phenomena of armed conflict (Kersnovskiy, 1939:p.31), while other sources claim that the term *operatika* was coined in 1912 (Mariyevskiy, 1995:p.245). The term was attributed to A.V. Gerua and E.E. Messner. In their view, strategy dealt with waging war as a whole while *operatika* pertained to the conduct of the battle at the army level. Tactics referred to conducting combat from the army corps level and down. This early division of military art into strategy, *operatika*, and tactics was a significant development because, eventually, it helped to separate operations from strategy and tactics (Harrison, 2001:p.29).

The Soviets/Russians and all formerly communist-dominated militaries used the term operational art. In contrast, the Chinese military use the term *science of campaign*. The term operational art was coined by the former tsarist general, and one of the most important Soviet military

theoreticians, Aleksandr' A. Svechin (1878–1938), in his book *Strategy* (rus. *Strategiya*), published in 1923 and 1927 (Varfolomeyev, 1928:p. 84)[2]. He explained that "tactical activity is governed by operational art (*rus. operativnoye iskusstvo*). Combat operations are not self-contained. They are only the basic material from which an operation is formed. Only in rare cases can one rely on achieving the ultimate objective of combat operations in a single battle. Normally, the path to the ultimate objective is divided into a series of operations, separated, more or less, by lengthy pauses, which take place in different areas in a theatre and differ significantly from each other owing to the differences between the immediate objectives that one's forces temporarily strive for (Svechin, 1992:pp. 68–69). For Svechin, the purpose of operational art was to focus on the study and practice of operations (*major operations* in US terms). He defined an operation as "an act of war if the efforts of troops are directed towards the achievement of certain intermediate objective in a certain theatre of military operations (*rus. teatr' voyennykh deystvii*) without any interruption" (Svechin, 1992:p.69).

Between the 1920s and the collapse of the Soviet Union in 1991, the Soviets retained Svechin's understanding of operational art, except for some changes in wording. In the late 1980s, the Soviets described operational art as being "concerned with the study of the rules, nature, and character of contemporary operations; working out the means for preparing and conducting combat operations; determining the function of large forces (fronts, armies) and formations (corps, divisions) of the armed forces; establishing means and methods for organising and supporting continuing cooperation, security, and command and control of forces in combat; delineating the organisational and equipment requirements of large units of the armed forces; working out the nature and methods of operational training for officers and command and control organs; developing recommendations for the operational preparation of a theatre of military operations; and investigating the enemy view on the conduct of operational-level military operations" (Glantz, 1991:pp.10–11).

In contrast to the systematic German and Soviet approaches to studying

2 The Soviet military theoretician Nikolai Varfolomeyev (1890–1939) credited Svechin with the first use of that term as early as 1922.

operational art, the US military concentrated, during the interwar years, on the practice of planning and war-gaming the employment of large army formations and fleets. As a result, the US military was relatively well prepared for planning and conducting campaigns and major operations in several theatres during World War II. However, in the aftermath of the war, all of the lessons seemed to have been forgotten. In the 1950s, the US military tended to belittle the importance of operational art. The US services considered the Korean War (1950–1953) as an anomaly in the nuclear world. In the late 1950s and 1960s, the emphasis was on fighting insurgencies. The services did not believe in the value of joint training. Instead, they favoured tactical training in the army, fleet exercises in the navy and strategic studies in the air force (Holder, 1990:p.86).

The US services discovered the importance of being ready to fight a high-intensity conventional war in the aftermath of the Vietnam War. This, in turn, led to a steadily increasing interest in operational art. The US Army led the way. It created the former Soviet Army Studies Office in Fort Leavenworth, Kansas, in 1986 (its name was changed in 1991 to FMSO-Foreign Military Studies Office). The focus of the new office was a study of Soviet operational art. In 1982, the US Army was the first service to incorporate tenets of operational art in its doctrine. For example, in 1986, the US Army defined operational art as "the employment of military forces to attain strategic goals in a theatre of war or theatre of operations through the design, organisation, and conduct of campaigns and major operations" (US DoA HQ, 1986:p.10). The definition changed somewhat in 2001. Operational art was subsequently defined as "a component of military art concerned with planning, coordinating, and sequencing the outcomes of individual tactical events into a chain of linked actions, within the context of major operations and campaigns, to achieve the objectives established by a theater strategy" (Runnels, 1987:p.47). Since then, the US Army has revised the definition of operational art several times. For example, in 2010, operational art was described as "the application of creative imagination by commanders and staffs supported by their skill, knowledge, and experiences to design strategies, campaigns, and major operations and organize and employ military forces." Operational art "integrates ends, ways, and means across the levels of war" (US DoA HQ, 1986:p.GL-7). Both

of the latest versions of FM 3-0 *Operations* (2017) and Joint Publication (JP) 3-0: *Joint Operations* (2017) defined operational art as the "cognitive approach by commanders and staffs – supported by their skill, knowledge, experience, creativity, and judgement – to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means" (US DoA HQ, 2017:p.GL-13). All of these definitions, however, contain several inaccuracies. For example, "designing strategies" is not a domain of operational art but of strategy and policy. The terms "ends, ways, and means" are usually related to strategy not operational art. Operational art is not applied "across the levels of war" but only at the operational and military/theatre-strategic levels. A sound definition should also state clearly that the operational art is both a science and an art. Among other failings, the ultimate objective of campaigns and major operations was left unstated.

What is operational art?

In generic terms, operational art can be defined as *a component of military art concerned with the theory and practice of planning, preparing, conducting, and sustaining campaigns and major operations aimed at accomplishing strategic or operational objectives in each theatre*. A *major operation* consists of a series of related major and minor tactical actions meant to accomplish a single operational objective (and sometimes a limited strategic one) in a given part of a theatre. It is planned and executed by a single commander and in accordance with a common idea (scheme). A *campaign* in a high-intensity conventional war consists of a series of related major operations (land, sea, and air) and numerous tactical actions meant to accomplish a single strategic objective in a theatre. It is planned and executed by a single commander and according to a common idea. A campaign in operations short of war (e.g. in counterinsurgency) consists of numerous tactical actions and some major operations. All campaigns are conducted by multi-service and often multi-national forces. In contrast major operations are conducted predominantly by a given service (army, air force, navy, and on rare occasions also by special forces) but with significant support of other services.

Operational art dictates that the commanders and their staff keep a firm and unwavering focus on the operational or strategic objectives to be

accomplished and not on targets to be destroyed or effects to be generated. Prior to combat, the objectives are determined top–down, thereby ensuring that they are accomplished logically and coherently.

Operational art can be applied across the entire spectrum of warfare, from operations short of war to high-intensity conventional war. However, because of the predominantly non-military character of the strategic objectives in operations short of war compared with high-intensity conventional war, the application of operational art is much more complicated. The full richness of operational art can only be appreciated in the framework of large-scale conventional operations. It is there that all of its aspects can be fully applied. In contrast to the Soviet/Russian practices, application of operational art should not be tied to the level of command or size of forces (Fűhrungsakademie der Bundeswehr, 1992:p.1; Fűhrungsakademie der Bundeswehr, 1993). What matters most is whether or not a given force has sufficient combat potential to accomplish an operational or strategic objective.

The operational commander should properly apply the tenets of operational warfare to sequence and synchronise the individual tactical actions that, together, accomplish the objectives determined by military or theatre strategy (Runnels, 1987:p.47). A series of disconnected tactical actions may ultimately result in an operational or even strategic success, but over a longer time and with more losses to friendly forces than if these actions had been an integral part of a campaign or major operation.

Theory and Practice

Like strategy and tactics, operational art is both an art and a science[3]. Each component of military art demands reflection, study, and practical

3 "Science" is the possession of knowledge through study, while "art" is the performance of actions as acquired by experience, study, or observations (Merriam-Webster, 1981: p.2032). Carl von Clausewitz wrote that the object of science is knowledge, and the object of art is creative ability (Clausewitz, 1976: p.122). J.F.C. Fuller wrote in 1926 that to deny a science of war and then to theorize on war as an art is pure military alchemy, a process of reasoning that for thousands of years has blinded the soldier to the realities of war and will continue to blind him until he creates a science of war upon which to have his art (Fuller, 1926: p.21).

application. The art aspect means that operational art, like the other two components, is ambiguous and imprecise, requiring a creative and highly innovative approach to its application. Theory of operational art is universal because it is based on the experiences of the militaries of all civilisations and nations. Application of that theory depends on the national or service way of war, or even the personalities and leadership of individual operational commanders.

The theory and practice of operational art are inextricably linked. Practice should always dominate theory. Any time theory conflicts with practice, it must yield to practice. A sound theory should ensure that it is not disconnected from the operational realities; otherwise, it cannot provide the basis for a successful application of the tenets of operational warfare. At the same time, one should not overemphasise either theory or practice, because that would invariably result in a general weakening of the knowledge and understanding of both. The theory is critical to refining and improving the existing methods of applying operational warfare. Theory should deal with each war and each era of warfare on its own terms and should always accommodate itself to change. It is the task of theory, taking full advantage of the latest and emerging technological advances and corresponding changes in the character of warfare, to analyse, refine, and further develop the components of operational warfare and their constituent parts. The field of theoretical study and practical application of operational art is too large and too diverse to be arranged neatly into a "system" of thinking. Further, there is no particular order or sequence in which these components should be applied. The various elements that make up any given component of operational art are grouped because they are related to each other, and it makes it easier to discuss them and develop a theory (Luvaas, 1986:p.34).

The theory of operational art provides both a framework and a direction for the development of service and joint doctrine. Among other things, theoretical knowledge and understanding of a given aspect of warfare make improvisation easier in wartime, when both time and resources are in short supply. The theory also greatly improves precision in using various key operational terms, so facilitating communication between theoreticians and practitioners.

Types of Operational Art

There are both commonalities and some significant differences in the ways services employ their forces. These distinctions are largely the result of the features of the physical environment (land, air/space, and sea/ocean) in which each service predominantly operates. For example, ground troops operate in much more diverse and, in many ways, more difficult physical environments than an air force. Their employment is also heavily affected by the situation in the air. Land warfare is conducted in two physical mediums (land and air), whereas war at sea is conducted in three physical mediums (surface, air, and subsurface). Clearly, the objectives and methods of employing combat forces in land, air, and naval warfare are considerably different. Dominance in cyberspace emerged as one of the main prerequisites for obtaining control in a given physical medium.

The ways that each service is employed individually or as part of multiservice (joint) forces differ considerably. Therefore, a distinction should be made between operational art specific to each service and operational art for multiservice/multinational (joint/combined) forces. Each service should be concerned chiefly with developing a theory of planning, preparing, and conducting their respective major/joint operations, while joint/combined forces should focus on the theory and practice of land or maritime campaigns (Figure 1)[4].

The Importance of Operational Art

Operational art can offer considerable advantages to the side that practises it properly. Among other things, it provides a larger and broader framework within which tactical combat takes place. Without operational art, the war would be a series of randomly fought tactical actions, with relative attrition the only measure of success or failure.

4 The Soviets, in contrast to Western theoreticians, believed there is only a single military strategy, while each service develops and practises its own operational art; hence, they differentiated the operational art of strategic missile troops, ground forces, air forces, troops of air defence, and naval forces.

The skilful application of operational art greatly enhances the prospects for a highly capable, well-trained, and skilfully led force, guided by a sound and coherent strategy, to defeat a much stronger opponent. The essence of operational art is to win decisively in the shortest time possible and with the least loss of human life and materiel. This is especially important in an era of smaller forces, limited resources, and low tolerance for casualties by the political leadership and public.

Skilful application of operational art combined with excellent leadership, sound doctrine, and high combat training were often the most determining factor for success in a war. Numerical superiority in itself is rarely sufficient against resourceful enemy who thinks operationally vice tactically. A well-known and influential German theoretician, General Friedrich von Bernhardi (1849–1930), criticised the belief in the importance of numerical superiority that was so prevalent in the European armies of his time. The European military believed that armies armed and equipped with equal numbers of weapons and equipment would have similar capabilities (Bernhardi, 1912:pp.84–85). He emphasised the need to attend to the intangible elements of the factors of force. Bernhardi contended that it should never be forgotten that moral and spiritual factors are different in each situation. They are also often more important than numerical factors. Sometimes, the spiritual strength of an army can balance other deficiencies. The influence of a single personality can considerably increase the capabilities of the entire army and even the entire state (Bernhardi, 1912:p.94).

Inferior forces have often defeated a much larger force because of the better quality of their leaders and the better training, morale, and discipline. For example, during the Seven Years' War (1756–1763), Frederick the Great, with 41,000 men, defeated 64,000 Austro-French troops (20,000 were not engaged) in the Battle at Rossbach in November. At Leuthen in December 1757, with an army of 35,000 men, he defeated some 65,000 Austrians (Dupuy and Dupuy, 1986: pp.669–71). In the American Civil War (1861–1865), General Robert E. Lee, with fewer than 50,000 men, successfully repulsed an attack by some 90,000 men of the Union Army in the Antietam (Sharpsburg) campaign (in fact, a major operation) in September 1862 (Dupuy and Dupuy, 1986:p.879). In the German invasion of the Benelux countries and France in May 1940, better

leadership and training – not better weapons – were the principal reasons behind the German's phenomenal successes despite numerical inferiority. The Allies then had 3,740,000 soldiers vs. 2,760,000 Germans; the French had 3,254 tanks, but only three armoured divisions, while the Germans had organised their 2,574 tanks in ten panzer divisions. In contrast, the balance in the air did not favour the Allies. The French had only 1,090 modern aircraft (including 610 fighters, 130 bombers, and 350 reconnaissance aircraft); the British provided, in addition, 160 fighters and 272 bombers. The Germans had some 3,500 aircraft available (Cohen and Gooch, 1991:pp. 201 and 206).

In the Six-Day War (5–10 October 1967), the Israeli Defence Forces defeated quickly and decisively much larger Arab armies. The Israelis mobilised 250,000 men, of which 225,000 were in the army (Dupuy, 1978:p.231). Their forces were smaller but far better led and trained than their Arab enemies. For the Israelis, the Sinai was the primary area of the theatre. This is why the Israelis concentrated some 70,000 men and 750–800 tanks on their southern front (Dupuy, 1978:p.244). Initially, the Israelis were strategically on the defensive on the Jordanian and Syrian fronts (Dupuy, 1978:p.233). In contrast, the Egyptian army's strength was fragmented. Some 50,000 men were deployed in Yemen (because of Egyptian intervention in a civil war), and 70,000 troops were scattered west of the Suez Canal (to deal with a potential landing of the Anglo-French forces). This left only approximately 100,000 troops defending the Sinai. Most of the Egyptian troops were ill-trained (Dupuy, 1978:p.236).

An excellent and relatively recent example of successful planning and execution of major/joint operations by a small country was the Croatian liberation of the Krajina in August 1995 (operation Oluja-Storm). The battle line extended for some 630 kilometres. The area under control of the Serbian rebels was approximately 11,500 square kilometres. All three services (army, air force, and navy) plus special police of the Ministry of Interior (Rakić and Dubravica, 2009:p.259; Domazet-Lošo, 2002:p.119) took part in the operation. The Croats employed some 184,000 troops against 50,000 Serbian rebels, which gave them 3.7 to 1.0 superiority (Domazet-Lošo, 2002:p.119). The Croatian army operated from a long and unfavourable exterior base of operations. The plan of the operation was based on cutting off the rebel

forces by almost simultaneous attacks and advancing along some 20 major and minor axes of advance (thrusts), including three thrusts from western Herzegovina (Rakić and Dubravica, 2009:p. map 3.2.). This, in turn, was one of the primary reasons that the entire operation was successfully completed in only four days. The Serbs were poorly organised and suffered from low morale. They offered weak or no resistance to the advancing Croatian troops.

Operational art highlights the need for the commanders and their staffs to comprehend fully not only military but also non-military (diplomatic, political, economic, financial, social, religious, etc.) aspects of the situation in a given theatre when they plan, prepare, and execute major campaigns or operations. It also emphasises that, in modern times, national (or theatre) strategic objectives cannot be accomplished without the properly sequenced and synchronised employment of multiservice and often multinational forces. This, in turn, requires the highest degree of cooperation or jointness among the services. The employment of two or more services can significantly neutralise the disadvantages of one service by exploiting the advantages of other services.

Knowledge and understanding of operational art are essential to the success of subordinate tactical commanders as well. To act in accordance with the operational commander's intent, major tactical commanders need to understand a broader, that is, operational, picture of the situation. By understanding operational art, they can reach decisions that will contribute significantly to the accomplishment of the overall operational or strategic objective.

The study of past campaigns and major operations greatly improves the quality of officers' professional education. Among other things, the study of the history of operational warfare underscores the fact that all fundamental areas of warfare are critical to success and, in particular, emphasises that it is invariably wrong to artificially divide warfare into offensive and defensive categories. Operational art provides a framework for writing operational doctrine.

Prerequisites

Success in the practical application of operational warfare is difficult to achieve unless several prerequisites are met. Among other things, the conduct of major operations and campaigns requires sufficient physical space for one's forces to manoeuvre freely. The operational commander's *mastery of tactics* in his chosen specialty is a key prerequisite for success at the operational and strategic levels of war. The operational commanders and their staffs have to think *operationally* vice tactically. Among other things, operational thinking means differentiating between essential and non-essential or even trivial events in a situation. It impresses on the operational commander the need to ensure that all actions and measures are planned and executed within a broader framework dictated by policy and strategy. The most important prerequisite is an operational perspective, the ability to see clearly and objectively the essentials of the military and non-military aspects of the situation in a given theatre. The operational commander should possess at least an approximately accurate picture of the situation several weeks or even months into the future (Manstein, 1982:p.409). The operational commanders should also have good knowledge and understanding of the non-military aspects of the situation and trends in a given part of the theatre. Another prerequisite for the success of a major operation or campaign is continuous and effective operational support (operational intelligence, information operations, operational logistics, and operational protection).

The operational commanders and their staffs should use commonly accepted and understood operational terms; otherwise, communications within a service and among services become difficult, if not impossible. It does little good to recognise a problem and formulate an approach to it if the language with which it is expressed is confused or uncertain. As the late Henry E. Eccles (professor at the US Naval War College) so eloquently wrote, "strict accuracy should regulate our use of language".

Thoughts should be expressed with perspicuity and correctness. False logic, disguised by specious phraseology, too often gains the assent of the unthinking multitude, disseminating far and wide the seeds of prejudice

and error. A misapplied or misapprehended term is sufficient to give rise to fierce and interminable disputes" (Eccles, 1965:p.5).

Relationships

All three components of military art are closely related. Their mutual relationships are highly dynamic. Also, there is no clear-cut line separating these three components (Figure 2). Actions and events at the tactical level often affect strategy and policy in the most profound ways. Likewise, the application of operational art considerably influences both strategy and policy on one hand and tactics on the other.

Strategy and policy should always dominate operational art and tactics. A significant problem arises when operational art begins to interfere with or, even worse, dominate policy and strategy either intentionally or by default. The strategy should invariably dominate operational art; otherwise, the results will be fatal (Jablonsky, 1987a:p.73). For example, the Axis campaign in North Africa in 1941–1942 was driven and dominated by operational, and sometimes even tactical, vice strategic, considerations. Field Marshal Erwin Rommel's (1891–1944) successes against the Allies led to the steady expansion of the Axis war aims, which, in turn, required more forces to be drawn into a secondary theatre of operation. Rommel tried to advance to the Suez Canal and seize Middle Eastern oil fields far beyond a reasonable distance from his bases of support, resulting in a serious mismatch between ends and means (Glanz, 1963:p.5; Jablonsky, 1987a:p.74).

In general, strategy guides operational art by determining the ultimate objectives to be accomplished and allocating necessary military and non-military resources. Strategy also defines and imposes limits on the employment of one's combat forces and imposes conditions on tactical combat. To be successful, major operations or campaigns must be conducted within a framework of what is operationally and strategically possible (Jablonsky, 1987b:p.14).

Whenever the ends and means at the strategic level are seriously disconnected or mismatched, brilliance at the operational and tactical level, as the Germans

consistently displayed in World War II, can only delay, but not prevent, ultimate defeat. The situation becomes untenable if the political leadership is unwilling to commit all available sources of power, as the example of the USA in the Vietnam War (1965–1975) demonstrates.

Poor application of operational art can lead to tactical defeats, which, in turn, may have operational as well as strategic consequences. For example, the Japanese Combined Fleet suffered a decisive defeat in the Battle of Midway because of a flawed operational plan, despite the overwhelming Japanese superiority in forces. This example perhaps best demonstrates how the superiority of one's forces can easily be squandered when operational thinking on the part of operational commanders is inadequate or entirely lacking.

Tactics is both the art and science of planning, preparing, and employing individual platforms, weapons and associated sensors, and single/combat combat arms/branches to accomplish tactical objectives. Moltke the Elder observed that tactics are the basis of operations (operational art today). Tactics should create the prerequisites for operational or strategic success, which the operational commander must then exploit (Fűhrungsakademie der Bundeswehr, 1992:pp.17–18). Tactics should ensure that results are in harmony with operational art and strategy. Generally, a tactical action should not be fought unless it is part of the operational design and contributes directly to the accomplishment of operational or strategic objectives. Tactical victories are meaningless if they are fought outside the operational framework. For example, in the Battle for Leyte, Admiral William F. Halsey (1882–1959), commander, US Third Fleet, won a tactical victory in the Battle off Cape Engano with his Task Force 38 (TF-38; fast carrier force) over a much smaller and weaker Japanese carrier force on 25 October 1944. However, his decision to uncover San Bernardino Strait almost led to the failure of the entire supporting major naval operation. The Third Fleet's mission in the Leyte operation was to provide effective distant (operational) cover and support to the Allied forces that landed on Leyte. Only Vice Admiral Takeo Kurita's decision to turn north and leave the scene of action when his force was on the verge of defeating the US escort carrier group in the Battle off Samar on 25 October saved the Allies from suffering an ignominious defeat at the hands of a much weaker force.

The accomplishment of operational and strategic objectives depends on the results obtained by tactics. Strategy, for its part should ensure that tactical combat is conducted under conditions favourable for accomplishing strategic objectives. Bad tactics can invalidate a good strategy and operational art. Therefore, a sufficient level of tactical competence is always required to achieve strategic or operational objectives. For example, the US Navy did not match tactical skills with the Japanese during the protracted struggle for Guadalcanal (August 1942–February 1943). However, the Allies ultimately won because they matched means and ends at the operational and strategic levels better than the Japanese did. Defeats in a major operation, such as those of the Germans at Stalingrad (November 1942–January 1943) and the Japanese at the Battle of Midway (June 1942) in the Midway-Aleutians operation, can not only doom the entire major operation, but also have an immediate and profound effect on the strategic situation in a given theatre.

Perhaps the worst thing to do is to confuse tactics with strategy and strategy with the conduct of war, as the Imperial Japanese Navy did in the pre-war years. The Japanese were fixated on the single decisive battle, after the manner of the Battle of Jutland on 30 May-1 June 1916. That preoccupation guided their tactical doctrine and ship designs. However, this resulted in a powerful surface force that was both one-dimensional and brittle (Evans and Peattie, 1997:p.515).

In operations short of war, relatively small tactical defeats, or even the perception of the insurgents' strength, can often undermine a country's will to fight. For example, the French defeat at Dien Bien Phu in 1954 in the First Indochina War and the North Vietnamese/Vietcong Tet offensive in January–February 1968 were not militarily crippling; however, they decisively undermined popular and political support for the war in France and the USA, respectively (Jablonsky, 1987a:p.71).

Tactics should never be allowed to significantly influence, much less dominate, strategy, either by design or by default. If this occurs, strategy will be defined by tactical considerations, or even applied as an afterthought (Handel, 2001:p.355). The principal reasons for what the late Dr Michael Handel called the "tacticization" of strategy have been the uncontrolled

ambition of military field commanders and the tactically oriented thinking of political leaders. The ever-increasing reliance on advanced weaponry and sensors, coupled with the reluctance to accept unnecessary casualties in a conflict involving no vital national interests, has created a situation in which targeting has become a de facto substitute for sound strategy.

Tactical brilliance can rarely overcome poor operational performance. Then, no number of tactical victories can save one's forces from ultimate defeat. A lack of operational thinking invariably results in wasting the fruits of tactical victories. For example, the German offensive on the western front in April 1918 resulted in heavy losses for the Allies and a considerable gain of space for the Germans (Bassenge, 1964:pp.19–20). Despite a series of tactical victories, the Germans failed to expand their penetrations into operational breakthroughs at any part of the western front. Hence, the key prerequisite for reaching a strategic decision was not achieved. Moreover, the Germans' local gains in terrain resulted in a longer front line to be defended. The German army was morally and psychologically exhausted. In summer, the Germans reverted to defence (Meier-Dornberg, 1988:p.73). The Allies gained the initiative that eventually led to an armistice in November 1918 and ended in Germany's defeat.

Tactics can sometimes be heavily influenced by politics, especially domestic policy considerations. This excessive "politicisation" of one component of military art often has fatal consequences for military effectiveness as a whole. For example, the French tactical doctrine of "offensive at any price" before 1914 affected the operational level. During World War I, as casualties mounted and the public outcry became deafening, this doctrine became increasingly disconnected from the strategic reality (Beck, 1955:p.79; Fűhrungsakademie der Bundeswehr, 1992:p.15; Jablonsky, 1987a:p.73).

Characteristics

The principal characteristics of operational warfare, compared with tactical actions, are larger dimensions of forces, time, and space. The main reason for these differences is the much larger scale of an operational or strategic

objective. Major operations and campaigns are conducted in large parts of the theatre. A tactical action can last hours or even minutes, while a major operation is conducted over several days or even weeks. The duration of a typical campaign varies greatly, from weeks to several months or even much longer as in the case of insurgency or counterinsurgency. The accomplishment of operational or strategic objectives requires the employment of larger and more diverse forces than does the accomplishment of tactical objectives. In the past, large and diverse forces (numbered and theatre armies, fleets, and air fleets) were typically required to conduct a campaign or major operation. This is not the case today, where a relatively small force can be employed to accomplish an operational or, in some special cases, even a limited strategic objective. What counts most is not the numerical strength of one's forces but their combat potential. Another factor is the perceived strength or weakness of the enemy's forces. Even in the past, therefore, relatively small forces were able to accomplish operational or even strategic objectives. For example, the Field Marshall Arthur Wellesley, 1st Duke of Wellington (1769–1852) in his successful Peninsular Campaign in Spain (1809) had a much smaller force than the French had. The US general Winfield Scott's landing at Vera Cruz, Mexico, in early March 1847 was carried out by approximately 12,000 troops and had a strategic effect on the outcome of the Mexican–American War (Adams and Newell, 1988:p.35).

In several instances in World War II, forces no larger than an army corps conducted major operations. For example, just before their invasion of France in May 1940, the Germans formed their first armoured operational-size force, *Panzergruppe von Kleist* (an army in all but name), which, in cooperation with the *Luftwaffe*, was capable of conducting major land operations. This force was the key factor in the successful German penetration of the French defences at Sedan and in the subsequent advance to the French Channel coast that eventually cut off the major part of the French and British troops in northwestern France. The Japanese 25th Army led by General Tomoyuki Yamashita (1885–1946) and composed of three divisions with only 35,000 men but strongly supported by air and naval forces, conquered Malaya in just three months. Of the initial British force of some 70,000 troops (plus 15,000 administrative and unarmed personnel), 62,000 British, Indian, and

Australian troops surrendered unconditionally to the Japanese after the fall of Singapore (Dear and Foot, 1995:pp.1009–1010). Likewise, for the invasion of the Philippines, the Japanese assigned the Southern Army, composed of only two infantry divisions plus supporting troops consisting of seven regiments (four of which were combat troops) and six battalions (Morton, 1953:p.59). The main forces employed in May 1941 in the ill-fated German attempt to destroy British convoys in the North Atlantic (*Rheinübung*, Rhine Exercise) were organised into a combat group (*Kampfgruppe*) composed of a single battleship *Bismarck* and a heavy cruiser *Prinz Eugen* (Mallmann Showell, 1990:p.201).

Because of the larger scale of operational/strategic objectives and consequently the larger force involved, planning for campaigns/major operations is more complex and requires more time than planning for a tactical action. Campaigns and major operations are planned by using *regressive* (inverse) methods, in which the ultimate (strategic or operational) objective is determined first and from that a series of intermediate military objectives (operational or major tactical) is determined. The deployment of one's combat forces taking part in a campaign or major operation encompasses a much larger physical space and requires far more time to complete than deployment for a tactical action. More important, errors in deploying one's forces into a theatre can fatally affect the initial phase and even the outcome of a campaign or major operation. Combat force deployment forms the very heart of a plan for a major operation or campaign; it directly influences not only the accomplishment of the next operational objective but also the subsequent decisions made in combat.

Because of the relatively long duration of major operations and campaigns and the diversity of participating forces, the logistical support and sustainment are more complex to organise and execute than they are for tactical actions. The operational commander is normally vested with the responsibility of organising and controlling logistical support and sustainment, while a tactical commander only uses logistics but does not control it.

Conclusion

Operational art is the only means of orchestrating and tying together tactical actions within a larger design that directly contributes to the objectives set by policy and strategy. Tactics alone cannot lead to the accomplishment of the operational or strategic objective unless it is not an integral part of a broader operational framework. The sound application of operational art is the key to winning decisively in the shortest time and with the least loss of men and materiel. All past wars were won or lost at the strategic and operational levels, not at the tactical level. Generally, the smaller the one's forces, the more critical is to properly apply operational art. The history of past wars has demonstrated that neither superior technology nor superb tactics can ensure, by themselves, victory in a war. An exclusive focus on technology or tactics is likely to result in time-consuming and costly attritional warfare against a resourcefull and robust opponent. Moreover, relying solely on better technology would rob warfare of its "art." It would make one's forces vulnerable to an opponent who, although technologically inferior, thinks better and faster and uses his smaller forces more creatively, perhaps asymmetrically.

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