Military Effectiveness and Innovation in the First Half of the 20th Century

2nd writing assignment for Strategy and Policy

prepared by
Benedikt Wahler
Class of 2004 (Bologna Center)

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by Professor Alan J. Kuperman
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The Bologna Center

Millet and Murray understand "[m]ilitary effectiveness [as] the process by which armed forces convert resources into fighting power"[1], resources ranging from human and natural ones to leaders' intellectual capacity.[2] This paper attempts to identify the subset of most important factors affecting this process' ability to enable a country to achieve its stated objectives in modern war.

The conflicts of the early 20th century were marked by interdependence of the levels of military effectiveness, with effectiveness "in operational and tactical terms (…) vitiated by persistent failures at the political and strategic level." [3] It follows that for military equipment, doctrine and fighting power not to be futile or robbed of its competitive edge, it is essential to find consistent answers to the issues of grand strategy of a nation; consistent with both goals and capabilities. Despite having one of the best-prepared forces, Germany's assertive, boastful foreign policy, e.g. its naval build-up that antagonized Great Britain,[4] had produced a strategic *encirclement* that was beyond the country's military capabilities. The USSR of 1941 was in a similar predicament, finding itself unaligned and discredited as an ally of Hitler, while being unprepared for war in material and planning terms.[5] The summer of 1914 was a total breakdown of grand strategies: mobilization schemes paired with limited grasp by politicians of what they entailed had effectively annihilated flexibility and restricted the available means.[6] Thus, a military strategy had virtually abolished political supremacy in strategic planning and wrested all means besides total war from the toolbox of grand strategy.[7] The process of military strategic planning becomes a liability rather than an asset when it narrows its base to a few assumptions rather than examine a host of strategic scenarios in order to suggest a flexible set of options to decision-makers. The intense concern of the French about an expected total war was a strategic stricture of this type, leading to inability to react to the limited crisis of the re-militarization of the Rhineland in 1936, when Germany's aggressive policies might still have been stopped relatively easily.[8] And Chamberlain's lenience with Germany in 1938 was partly due to misjudgments on Axis capabilities and Czech defense potential.[9]

A good grand strategy, conversely, can mitigate weaknesses on lower levels, being "a politico-strategic process which [can] exploit the country's natural advantages, take into account the larger

purposes of (…) war, and try to balance means against ends."[10] This in turn, calls for a candid strategic assessment to furnish a basis for informed decision-making, an important prerequisite for this being a civilian-military relationship that respects war as ultimately an instrument of politics.[11] If this is not the case, the nation's survival may be at stake. Whereas in World War I "political prudence tempered territorial ambition"[12] of Japan, serving the country well in expanding its relative power, in 1941 a military strategy dissolved from the grand picture of national interest put Japan on a confrontational trajectory that hinged on unrealistically optimistic assumptions[13] and led to the country's total defeat. A drastic example is the late 1930s USSR with its armed forces totally subject to concerns of ideology and personal paranoia, undermining the preparedness for war and resulting in a tremendous loss of human life.[14] This, however, is not to say that the relationship needs to be smooth and conciliatory to be effective. It is to provide a constant dialogue that identifies and challenges key assumptions and policy ideas of the nation's strategic planning - a task that when neglected is likely to cause strategic misperceptions, which van Evera identifies as a root of many modern wars.[15] Cohen sees Winston Churchill exemplifying this form of control in which one leads by incessant interrogation of the military staff to probe the validity of their arguments and hypotheses while refraining from merely overruling their judgment.[16]

Kennedy's characterization of World War I (and implicitly its 1939-45 sequel) as "first, all-out, mass industrialized coalition war"[17] draws attention to two central issues of strategic planning in modern warfare: managing industrial, economic and logistic challenges and optimizing cooperation with allies. The nature of the industrialized land warfare caught the European powers off guard[18] and its dynamics often demanded that entire industries be built from scratch or rapidly expanded, such as British aircraft and ordnance production in World War I,[19] a feat only powerful economies with productive reserves could hope to achieve.[20] The economic base *per se*, however, represented only a potential; existing armaments firms were essential as the industrial and knowledge base for a war economy. Without them, the war effort was impeded and more costly, and the choice of strategic options curtailed.[21] In this context, Imperial Germany's provocations of the US

(unrestricted submarine warfare and suggesting Mexico enter the war) were strategic follies, for US entry into the war meant a decisive shift in the economic balance.[22] As the post-1918 Reichswehr neglected training in economic aspects, "military-industrial planning would remain one of the weakest links in German Army strategy."[23] This was a serious problem at a time when the constant need for resources like oil, mass ammunition and spare parts for war machinery, had drastically increased the importance of logistics in modern warfare. The second focus for strategies of modern war is a coordinated war effort when the outcome of the war depends crucially on allied support. The French-British quarrels in the trench warfare of 1914-18 made both less efficient in repelling enemy attack and offensively applying their force;[24] and in the interwar years, despite growing evidence that Germany represented a threat, cooperation even at the level of staff conversations was delayed until war was imminent.[25] Its belated start is likely to have notably reduced the potential benefits of coalition warfare in the 1940 Battle of France. These uneasy relationships contrast sharply with the mastery of war alliances as exemplified by Winston Churchill. Realizing that only in a joint effort Britain could secure victory, he made managing the network of alliances a national and personal priority. Despite the inherent disparities of interest and capability, and the limited leverage a weakened Britain had, this effort proved not only successful but also highly advantageous.[26] It is the nature of these wars of clashing masses that "[u]ltimately, attrition warfare is likely to shift the focus of military effectiveness from the operational level to the strategical and political".[27] Strategic considerations of the issues presented are thus crucial. They are, however, a necessary not yet a sufficient condition, since "no amount of political wisdom or strategic finesse can secure victory if a country's armed forces are ineffective on the battlefield."[28]

Military innovation is another key driving force in deciding the fate of warring nations, but the relationship between progress in military technology and military effectiveness is neither linear nor direct as Friedrich Engels already noted.[29] The *product innovation*, i.e. a new weapons system is merely an enabler; the *process innovation* of putting it to good use for the war effort determines its impact on military effectiveness. Tank, machine gun and aircraft became available to all West

European powers without long delays. However, while some were able to gain momentary superiority on the battlefield by their ingenious application,[30] others were inhibited by the apparent limited use of these arms in the framework of traditional doctrines. The Reichswehr and Wehrmacht showed ability to learn to combine them[31] into the powerful force that knocked Poland and France out of the war within weeks. At the same time, French doctrine could not see tanks in any other role than infantry companion in methodical movements,[32] and the Royal Air Force was unable to adapt its doctrines to the new kind of tactical air support that had become drastically evident in Poland.[33] Particularly as the potential of combined arms was not palpable once any single new weapon system became available, all depended on the originality of military planners. British aerial reconnaissance to enhance the effectiveness of counter-battery attacks in the First World War[34] provides a positive case. The French Second World War failure to use its competitive edge in mechanized infantry for fighting mobile battles rather than as mere means of transportation to the battlefield,[35] however, illustrates that even when already disposing of new technology the innovation that may be decisive for the war's outcome lies in its effective application to gain a distinctive advantage. It is evident that an organization that is built on hierarchy and obedience, like the military, is not particularly predisposed to innovate and change. Consequently, thinking outside of the box and discussion needs to be encouraged *from above*, such as impressively done in the post-Versailles Reichswehr.[36] The British forces of World War I, in contrast, are accused of an "unimaginative and inflexible tone of the senior officer corps (…), plus the lack of adequate 'feedback loops' between front-line experiences and the staff at the rear"[37] – conditions that are sure to inhibit reflection, debate and ultimately stifle organizational learning.[38] Churchill understood that it is unconventional persons that can be the yeast bringing a structurally conservative organization to fermentation, yielding creative solutions – he accordingly professed a predilection for "the sneaks and the stinkers",[39] who the British military had usually discouraged.[40] Integrating foreign strategic discussions into the evaluation[41] is another measure to help guard against organizational blind spots. Wartime provides a particular – although costly[42] - opportunity to engage in learning by-do-

ing and from experience, demanding a faster process of learning. The pressure under which the military is at that moment might make that either easier or harder to do. Peacetime gave a chance for the extensive analysis of First World War under von Seeckt out of which the doctrine of use of combined arms emerged, the future basis of *Blitzkrieg*.[43] The thus gained, implicit knowledge had to be embedded into the organization to fully unfold its effect for military effectiveness. Again, the Reichswehr in the 1920s set an example with its maneuvers, testing and refining its doctrine in combat simulations and anchoring the techniques in its officer corps.[44] The nexus between innovative weapons systems and their relevance for military effectiveness are doctrines, i.e. operational concepts. [45] While this kind of innovation acts in a first instant principally at the level of tactics, it has repercussions on the operational and strategic levels as well.[46] In this vein, the issue of making effective use of new weapons systems is closely related to a clear integration of those systems into the strategic concept of the country.[47] In peacetime innovation much rests on forecasts and planning that can only be done "in a subjective, if not intuitive, fashion [and f]ew of the most crucial issues [have] obviously correct solutions."[48] Yet, it is exactly for that reason that a constant revision of military scenarios and doctrine and challenging assumptions is crucial, and no General Staff should be caught without a Plan B. Failure to provide for contingencies is an act of gross negligence for any institution charged with strategic planning.[49]

War being the realm of the unexpected[50] and its developments being contingent on the actions of multiple agents, flexibility is at the base of all of the factors of military effectiveness presented in this paper: intellectual flexibility of military and political leaders, and organizational adaptability of the armed forces.[51] Strategic Planning, addressing the key issues of modern warfare helps to get the military in a position of relative strength. Innovation will be its key to renewing and defending this position. As Paul Kennedy maintains, "the acid test of military effectiveness was whether one could handle not the expected but the *unexpected* elements thrown up in war."[52] Without this quality any military effectiveness will remain fleeting and short-lived – a death verdict in total war of the likes that raged twice in the early 20th century.

Bibliography

Bond, Brian and Murray, Williamson (1988). "The British Armed Forces, 1918-39". in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume II: The Interwar Period*. Boston: Unwin Hyman, pp. 98-130

James, D. Clayton (1986). "American and Japanese Strategies in the Pacific War," in Paret, Peter ed., *Makers of Modern Strategy*. Princeton: Princeton University Press, pp. 703-34

Corum, James (1992). *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform*. Lawrence, KS: University Press of Kansas

Cohen, Eliot A. (2002). *Supreme Command: Soldiers, Statesmen and Leadership in Wartime*. New York: Free Press

Coox, Alan D. (1988). "Military Effectiveness of Armed Forces in the Interwar Period, 1919-41: A Review" in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume II: The Interwar Period*. Boston: Unwin Hyman, pp. 256-270

Doughty, Robert A. (1988). "The French Armed Forces, 1918-40". in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume II: The Interwar Period*. Boston: Unwin Hyman, pp. 39-69

Fairbanks, Charles H. Jr (1991). "The Origins of the Dreadnought Revolution," *International His tory Review*, Vol. 13, No. 2 (May 1991), pp. 246-72

Herwig, Holger (1991). "The German Reaction to the Dreadnought Revolution," *International History Review*, Vol. 13, No. 2 (May 1991), pp. 273-83

Keegan, John (1998). *The First World War*. London: Pimlico

Kennedy, Paul (1988a). "Britain in the First World War". in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume I: The First World War*. Boston: Unwin Hyman, pp. 31-79

Kennedy, Paul (1988b). "Military Effectiveness in the First World War". in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume I: The First World War*. Boston: Unwin Hyman, pp. 329-350

Millett, Alan R., and Murray, Williamson (1988). "The Effectiveness of Military Organizations". in: Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume I: The First World War*. Boston: Unwin Hyman, pp. 1-30

Münkler, Herfried (2002). *Über den Krieg. Stationen der Kriegsgeschichte im Spiegel ihrer theoretischen Reflektion*. Weilerswist: Velbrück

Murray, Williamson (1984). *The Change in the European Balance of Power, 1938-1939*. Princeton: Princeton University Press

Sagan, Scott (2002). "1914 Revisited," in: Betts, Richard K. *Conflict After the Cold War: Arguments on Causes of War and Peace*. New York: Longman, pp. 416-28

Smith, Malcolm (1990). "The Allied Air Offensive," *Journal of Strategic Studies*, Vol. 13, No. 1 (March 1990), pp. 67-83.

von Clausewitz, Carl (1984 edition). *On War*. Michael Howard and Peter Paret, trans. Princeton: Princeton University Press

Van Evera, Stephen (1999). *Causes of War: Power and the Roots of Conflict*. Ithaca, NY: Cornell University Press

Ziemke, Earl F. (1988). "The Soviet Armed Forces in the Interwar Period". in:. Millett, Alan R., and Murray, Williamson. *Military Effectiveness. Volume II: The Interwar Period*. Boston: Unwin Hyman, pp. 1-38

[1] Millet and Murray (1988) p. 2
[2] cf. Millet and Murray (1988) p. 3
[3] Kennedy (1988a) p. 31
[4] cf. Herwig (1991)
[5] cf. Ziemke (1988) pp. 17f and the conclusion on p.19 that „[t]he Soviet armed forces, from top to bottom, were simply not at a stage of development in which they could have contended with the enemy on anywhere near equal terms either offensively or defensively."
[6] cf. Kennedy (1988b) pp. 340-342
[7] cf. Sagan (2002) pp. 416f, and Keegan (1998) chapter 2
[8] cf. Dougherty (1988) p. 42 and p. 52
[9] cf. Murray (1984) pp. 195-203, particularly p. 199: "To guarantee what one has rendered indefensible is, indeed, eccentric.", and chapter 7 for an estimate of German strength during the Sudetenland Crisis; also cf. Bond and Murray (1988) p. 105
[10] Kennedy (1988a) p. 31
[11] cf. von Clausewitz (1984 edition) p. 87, p. 605 and p. 607
[12] Kennedy (1988b) p. 340
[13] cf. James (1986) pp. 706-708
[14] cf. Ziemke (1988) p. 3 and p. 14
[15] cf. Van Evera (1999) p. 255 and p. 258
[16] cf. Cohen (2002) pp. 118-131
[17] Kennedy (1988b) p. 329
[18] cf. Kennedy (1988a) p. 35, and p. 43: "neither the logistical infrastructure nor the industrial-technical base was prepared for a total war involving millions of troops."
[19] cf. Kennedy (1988a) p. 44
[20] Two evident examples for "productive reserves" are the Soviet resource and industry centers in Siberia, and the US lend-lease program and eventual entry in the war relieving the pressures on British and Soviet war production.
[21] Bond and Murray (1988) p. 103
[22] cf. Kennedy (1988b) p. 343
[23] Corum (1992) p. 95
[24] cf. Kennedy (1988a) p. 47; and cf. Cohen (2002) pp. 68f
[25] cf. Dougherty (1988) pp. 52f; and cf. Bond and Murray (1988) pp. 109f
[26] cf. Cohen (2002) pp. 115-118
[27] Kennedy (1988b) p. 338
[28] Kennedy (1988a) p. 31
[29] cf. Münkler (2002) p. 157 and p. 165; Engels after his detailled studies of war had to discard the hypothesis of *product innovations* and productive forces driving success in war with which he had set out, motivated by Marx to integrate military history into Historical Materialism. He concluded that factors such as the constitution of the military organization and its adaptability were the decisive link between innovation and effectiveness.
[30] The concept of the *Schumpeterian entrepreneur* may serve as a point of reference: the military leader who is the first to find an innovative use (i.e. an apt military doctrine) for a new technology will be able to extract temporary monopoly gains from it relative to the enemy; this will drive the "creative destruction" of old doctrines and put pressures to adapt on the enemy armed forces.
[31] cf. Corum (1992) chapters 2, 6 and 7
[32] cf. Corum (1992) pp. 48f
[33] cf. Bond and Murray (1988) p. 120
[34] cf. Kennedy (1988a) p. 49
[35] cf. Dougherty (1988) p. 55
[36] cf. Corum (1992) p. xvi - it is probably valid to qualify this achievement by considering that the small, intimate size of the force and the disillusioning experience of the 1918 defeat may be factors facilitating this openness.
[37] Kennedy (1988b) p. 334
[38] In this case, these attitudes and behavior left its mark by the high death toll of the trench-warfare.
[39] Cohen (2002) p. 101
[40] cf. Bond and Murray (1988) p. 123: e.g. the case of Percy Hobart
[41] cf. Corum (1992) p. 123, p. 129, and p. 142 mentioning "hundreds of other articles by a wide variety of American, French, British, Italian and Polish junior officers" in the *Militär Wochenblatt*
[42] It took for instance until 1917 for the British to shift to the convoy systems against the U-Boot threat. cf. Kennedy (1988a) p. 41; and the British bomber command did learn little about strategic bombing despite losing 1047 aircraft between November 1943 and March 1944. cf. Smith (1990) p. 74
[43] cf. Corum (1992) pp. 37-39, and p. 139; and also Bond and Murray (1988) p.116: "the German panzer victories of 1939-41 rested almost entirely on the exploitation doctrine of 1918 German infantry tactics and their gradual extension throughout their army in the interwar period."
[44] cf. Bond and Murray (1988) pp. 120f; and Corum (1992), chapter 4, and p. 170 and p. 193
[45] Kennedy (1988a) p. 54 stating that the difficulty that "military organizations faced after 1914 was that their operational concepts were not matched by the appropriate technology: either the scheme was not complemented by the

right weapons, or the newer weapons had emerged but the military and naval leaders had not worked out how to handle them."; and Coox (1988) pp. 262 on outdated operational concepts before World War II; two key operational concepts would be the mobile, initiative-pricing *Blitzkrieg* on the German side, and the *bataille conduite* with its rigid, methodical movements on the French side.

[46] cf. Kennedy (1988b) pp. 329f and p. 330

[47] Effective use of weapons systems and their reasonableness in a country's arsenal have to serve the strategic objectives. For instance, Britain's move to the heavy-armored, slow battleships of the *Dreadnought* class and the ensuing new arms race with Imperial Germany does not appear to stand that test cf. Fairbanks (1991)

[48] Dougherty (1988) p. 66

[49] see opinion of Dougherty (1988) p. 66: "Beyond a doubt, French leaders had failed to recognize how warfare had changed since 1918"

[50] von Clausewitz (1984 edition) p. 85 and pp. 119-123

[51] see. for instance the judgment by Dougherty (1988) p. 58 that "the French had discounted the need for flexibility so much that its absence became their greatest weakness."

[52] Kennedy (1988b) p. 333