Journal of Military and Strategic Studies

VOLUME 13, ISSUE 2, WINTER 2011

The Idea of a Strategist's Education[1]

Lieutenant Colonel Steven A Pomeroy, USAF

> "Each generation of military planners is certain that it will not make the same kinds of mistakes as its forebears, not least because it feels it has profited from their example. Our own generation is convinced it has an additional and quite special reason for being sure of itself: it is more scientific than its predecessors."[2]
>
> Bernard Brodie

Introduction

[1]This essay adopted from "Ancient Alexandria, Alexander, and History: The Relevance of Humanistic Thought in the Contemporary Strategic Environment," a talk the author gave on December 28, 2009, Broadmoor Hotel, Colorado Springs, Colorado. The comments herein are those of the author and do not reflect the official policy or position of the Unites States Air Force Academy, the Air Force, the Department of Defense, or the U.S. government. The author wishes to thank the following professors: Colonel (Dr.) Thomas A. Drohan, Dr. James R. Titus, and Dr. John Farquhar of the Military and Strategic Studies Department at the United States Air Force Academy. The comments herein are those of the author and do not reflect the official policy or position of the United States Air Force Academy, the Air Force, the Department of Defense, or the U.S. government.

[2]Bernard Brodie, *Strategy in the Missile Age* (Princeton, NJ: Princeton University Press, 1959), 406. Contending that nuclear weapons had fundamentally changed the character, if not the nature, of warfare, Brodie emphasized the importance of rigor and a scientific approach to strategic problem solving in the nuclear era.

ISSN : 1488-559X

In his 1959 Rede Lecture, *The Two Cultures and the Scientific Revolution,* C. P. Snow contended, "the intellectual life of the whole of western society is increasingly being split into two polar groups."[3] With this, Snow placed scientists at one pole, and "literary intellectuals" at the other. Now a half-century old, Snow's contentious observation of the tension between formal, scientific reasoning and the informal reasoning of the humanities has resurfaced in the contemporary American strategic debate. The resurgence of interest in counterinsurgency operations in response to the stalled attainment of American national security goals in Afghanistan provides an example. A simplified interpretation of this strategic debate pits counterinsurgency (COIN) theorists against counter-terror proponents. COIN supporters proclaim the necessity of learning and using culture to win the hearts and minds of Afghanistan's population as a war winning approach.[4] Others seek to avoid such nation building. Counter-terror supporters propose eliminating terror networks via clandestine operations and technologically sophisticated operations including airstrikes without a substantial troop presence in foreign lands.[5] Based on the popular versions of these positions, the beginning student of strategy may rightly ask whether COIN requires more humanities-style thinking than that of the hard sciences. Conversely, one must ask whether a counter-terror strategy requires a more scientific-technological mindset allowing one to leverage technological advantages against the enemy.[6] This raises the question of whether one style of thought characterizes each side of the debate. Seen in this light, contemporary American strategic debate replicates Snow's dichotomy. In the United States, what some proclaim as "technology's nation," the tension between the scientific and humanities disciplines therefore lies at the matter's heart. The question is of some importance to those educating young strategists. This

[3]C. P. Snow, *The Two Cultures and the Scientific Revolution* (New York: Cambridge University Press, 1959), p. 4. Snow ignited a maelstrom of reaction, including F. R. Leavis, *Two Cultures? The Significance of C. P. Snow,* (New York: Pantheon Books, 1963). Leavis saw no significance in either Snow or his theses. This article uses Snow's contention to represent the difficulty social scientists and historians sometimes share in integrating their work.

[4]See, for example, David Kilcullen, "Countering Global Insurgency," available at http://smallwarsjournal.com/documents/kilcullen.pdf. Accessed on July 9, 2010; David Galula, *Counterinsurgency Warfare: Theory and Practice,* PSI Classics of the Counterinsurgency Era (Westport, Connecticut: Praeger Security International, 2006); and John Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: University of Chicago Press, 2002).

[5]Although the debate is often presented as a binary choice, reality is more nuanced. For a point-counterpoint discussion on the merits of contemporary strategic approaches, see two articles each by Gian Gentile, a non COIN theorist and John Nagl, a leading COIN proponent, in *Joint Force Quarterly* 58 (July 2010): pp. 116 – 123.

[6]Regarding the current Afghanistan War, the American Vice President, Joseph Biden, reportedly supports an approach he called "counterterrorism-plus." See Holly Bailey and Evan Thomas, "An Inconvenient Truth Teller," *Newsweek* 19 October 2009, pp. 30 – 35.

paper discusses how best to prepare the graduates of military and strategic studies programs to resolve such concerns.

To answer the posed query, the paper examines one example of undergraduate strategy education, that being the United States Air Force Academy. The narrative first probes the cultural foundations of the United States Air Force for relevant threads. It discusses the importance of formal and informal reasoning to strategy, including an illustration from the ancient world; examines the importance of history and the social sciences to the strategist's education; and recommends a foundation for the strategist's education by examining the evolution of the military and strategic studies discipline at the USAFA. In an attempt to revivify the relevance of history to strategy, the article emphasizes its importance to developing strategists; however, it does not contend the social sciences have no place within the craft. The emphasis herein lies on how best to inform broadly an interdisciplinary approach to such education. The premise is that this approach is not unique to the American military but applies generally to strategy education, including that accomplished within the University of Calgary's Centre for Military and Strategic Studies (CMSS) and similar institutions.

By Design, a Scientific and Technological Service Culture

Both the United States Air Force Academy and its namesake service reflect a broader American trend, what historian Thomas Parke Hughes described as "technology's nation."[7] Arguably dating to before the days of General Henry H. "Hap" Arnold, esteemed as one of the founders of the United States Air Force, the service has long prided itself as technological and scientific institution.[8] Why? No doubt, part of this is because the air domain is a human-made domain of war, and therefore inherently technological.[9] Equally relevant, the service's founders enthused over technology and science, and they believed that progress therein could secure strategic objectives. Arnold, along with his esteemed colleague the Hungarian physicist Theodore Von Karman, deserves much credit for this. Together they demanded the Air Force aggressively pursue science and technology to support military strategy. Voicing his appreciation for this relationship, Arnold affectionately mused, "the long-haired professors . . .

[7]Thomas P. Hughes, *Rescuing Prometheus* (New York: Pantheon Books, 1998), p. 1.

[8]The classic argument in this regard is Carl H. Builder, *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force* (New Brunswick: Transaction Publishers, 1994), pp. 155 – 164.

[9]With the exception of the land domain, the sea, space, air, and cyber domains all require human technology in order to conduct military operations. On land, one may result to fist blows, but each of the remaining domains requires a level of human-made tools in order to conduct operations.

[need to] see all the gadgets and data and drawings so as to give us a Buck Rodgers program to cover the next twenty years. . . . We must make accessible to the . . . boys all information available from all sources from all nations."[10] Arnold's wartime experience and postwar analyses of technologically sophisticated German forces shaped his thoughts. Moreover, he feared the United States would disadvantage itself by replicating the miserable state of American state-directed scientific and technological research circa 1938. He firmly believed "the spectacular innovations in technological warfare which appeared with ever-increasing momentum in World War II and culminated in the atomic bomb emphasize that continuous scientific research is imperative to ensure our national security and world peace."[11] For Arnold, the quality of national scientific and technological development deeply affected strategy.[12]

The application of the scientific method to improve the American citizenry's lot actually began earlier in the Progressive Era. This process accelerated during and after World War Two. Since then, American society has developed a technocratic state and culture.[13] As this occurred, systems analysts and social scientists rose to positions of political and social power. Within the military sphere, the increased complexity of nuclear weapons and large-scale warfare shaped changes to institutions, organizations, ideas, and socio-technical systems. Reasons offered for this phenomenon include the complexity of the early nuclear era strategic environment and concomitant context, theory, and application of military power. According to this narrative, that context outstripped the intellectual capacity of military strategists because such people were not scientifically inclined, Arnold's desire for a scientifically inclined service paradoxically notwithstanding.

[10]John W. Huston, ed., *American Airpower Comes of Age: General Henry H. "Hap" Arnold's World War II Diaries,* vol. 2 (Maxwell Air Force Base, AL: Air University Press, 2002), p. 367. Arnold wrote this entry, dated Friday, July 13, 1945, while in Paris enroute to a stay at Berchtesgaden, Germany, the site of Hitler's mountain top retreat. See also Dik Alan Daso, *Hap Arnold and the Evolution of American Airpower,* Smithsonian History of Aviation Series, ed. Von Hardesty (Washington, D.C.: Smithsonian Institution Press, 2000), pp. 196 – 197.

[11]H. H. Arnold, "Air Power for Peace," *National Geographic Magazine* 89 (February 1946), p. 171. Page numbers refer to *National Geographic's* bound index edition for vol. 89.

[12]Ibid., p. 193.

[13]See political scientist and historian Walter A. McDougall's classic statement of this thesis, *The Heavens and the Earth: A Political History of the Space Age* (Baltimore: The Johns Hopkins University Press, 1986). Even in the so-called "Information Age," the relationship between the government, industry, and academe remains strong, and technocracy, the institutionalization of research and development for state purposes, continues.

Formal and Informal Approaches

Rational science needed to save the day. A leading proponent of this position, the strategist and economist Bernard Brodie, believed in the efficacy of the scientific method as a strategy development tool. He remarked:

> The universe of data out of which reasonable military decisions have to be made is a vast, chaotic mass of technological, economic, and political facts and predictions. To bring order out of the chaos demands the use of scientific method in systematically exploring and comparing alternative courses of action. When the method is true to its own scientific tenets, it is bound to be more reliable by far than the traditional alternative method, which is to solicit a consensus of essentially intuitive judgments among experienced commanders.[14]

In stating this, he reflected the preference for the scientific method and formal reasoning that began growing throughout American society during the 1920s. Twenty-five years prior to Brodie's penning of these thoughts, the social critic, historian, and author Lewis Mumford anticipated him, scathingly indicting the military's role in human development by declaring, "the Army has usually been the refuge of third-rate minds."[15] Given these cultural and historical trends, it should come as no surprise that American strategy neglected conflict's human terrain.

Brodie's less worthy "traditional alternative method" that drew upon the "intuitive judgments among experienced commanders" was none other than a humanistic, history-based approach to strategy that relied less upon formal scientific reasoning than did its informal sibling.[16] The quality and application of history-based strategy decayed while facing the

---

[14]Brodie, *Strategy in the Missile Age,* p. 406. In fairness to Brodie, he did not claim to seek predictability. He sought to minimize chaos via rigorous, disciplined, and organized thinking that mimicked the formal reasoning of the sciences and mathematics.

[15]Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace, and World, Inc., 1934), 95. Mumford certainly was critical of the military, but he was also one of the few American intellectuals who supported an early American entry into World War Two.

[16]An example of informal reasoning's place in strategy is Prussian military theorist Carl Von Clausewitz's description of a military genius. Readers familiar with Clausewitz will recall his listing of traits and emphasis on coup d' oeil, the inner eye. His formulation expresses the importance of informal reasoning, judgment, and intuition in the strategy and conduct of military operations. See Carl Von Clausewitz, *On War,* Michael Howard and Peter Paret, eds. (Princeton, NJ: Princeton University Press, 1976), pp. 100 – 112.

theoretical onslaught from theories of scientific management and analysis. The latter shaped the minds of American strategists for decades with significant societal ramifications. According to political scientist Sam C. Sarkesian, the strategist began serving the social sciences rather than the opposite, much like the cartoon character Mickey Mouse slaved to his miscast spells in the cartoon *Sorcerer's Apprentice*.[17] Given Brodie's and Sarkesian's critiques, the former favoring the application of science to strategy and the latter cautioning against it, examining the distance between these positions is worthwhile. To do so, let us step back two millennia in time to one of the great cities of the ancient world, Alexandria.

A Pause in Time: Ancient Alexandria

In the third century before the Common Era, Alexandria was one of the great hubs of the Western World.[18] Indeed, one may argue, it helped make the Western World. Alexandria was a magnificent seaport in which city officials searched arriving ships not for contraband but for books. Public scribes borrowed the books, copied them laboriously by hand, and returned them to their owners. The copies numbered in the half millions, and officials emplaced them within the city's great library and made them available to researchers. This was the first place in which Western Civilization collected systematically the knowledge of the world. Within Alexandria, there lived a man named Eratosthenes, who one of his envious rivals described as "Beta" because, he said, Eratosthenes was second best in everything. As the late astronomer Carl Sagan eloquently described, Eratosthenes was clearly "Alpha," an historian, astronomer, geographer, philosopher, and more. The titles emergent from his hand ranged from *Astronomy* to *On Freedom from Pain.* A busy man, one of his duties was directing the Library of Alexandria, wherein one day he read that on the longest day of the year at the southern city of Syene, at noon, vertical sticks or temple columns cast no shadow. The Sun was directly overhead.

Eratosthenes asked why on June twenty-first, at the same moment, sticks in Syene cast no shadow and sticks in Alexandria, far to the north, did. The only possible answer, he saw, was that the surface of the Earth curved. Not only that: the greater the curvature, the greater the difference in the shadow lengths. The Sun is so far away that its rays are parallel when they reach the Earth. Sticks placed at different angles to the Sun's rays cast shadows of different

[17]Sam C. Sarkesian, "The Sorcerer's Apprentice: Social Science and the American Military" in *Tooling for War: Military Transformation in the Industrial Age,* Stephen D. Chiabotti, ed. (Chicago: Imprint Books, 1996), p. 240.

[18]The wise storyteller does not attempt to cheapen a master's tale. As such, the following description of Eratosthenes and Alexandra comes from Carl Sagan, *Cosmos* (New York: Random House, 1980), pp. 14 - 15. For clarity, I have made minor changes to Sagan's narrative; however, it qualitatively remains his.

lengths. For the observed difference in the shadow lengths, the distance between Alexandria and Syene had to be about seven degrees along the surface of the Earth; that is, if you imagine the sticks extending down to the center of the Earth, they would there intersect at an angle of seven degrees. Now, seven degrees is something like one-fiftieth of three hundred and sixty degrees, the full circumference of the Earth. Eratosthenes knew the distance between Alexandria and Syene was approximately 800 kilometers, because he hired a man to pace it. Eight hundred kilometers times fifty is 40,000 kilometers, so that must be the circumference of the Earth.

This was the right answer. His only tools were sticks, eyes, feet, and brains, plus a taste for experiment. With them, he deduced the circumference of the Earth with an error of only a few percent, a remarkable achievement for two-thousand, two hundred years ago.[19] Eratosthenes drew upon the traditions of a society richly steeped in informal reasoning but also employed formal reasoning to calculate the Earth's circumference. As with strategy and warfare, a seemingly minor observation profoundly revealed much. Eratosthenes's ruminations not only shaped the world, they made the world. Moreover, the indictments of Brodie and Mumford notwithstanding, a military strategist helped make it possible. How so?

In its glory, Alexandria was a remarkable place. Founded by Alexander the Great and constructed by his former bodyguard, Alexander and his kingly descendants in this case set an example for occupying forces.[20] He encouraged respect for other cultures and the open-minded pursuit of knowledge. He encouraged his generals and soldiers to marry Persian and Indian women. He respected the gods of other nations. He collected exotic life forms from around the planet as well as the knowledge of various academic and physical disciplines. He sought to understand the world as it was, not as he wished it to be. His tutor was Aristotle. A Macedonian, he combined archetypes of the Athenian scholar and Spartan warrior.

A thoroughly military man, Alexander saw no discontinuity between service and synthetic or analytical and critical thought. To him, knowledge of the world, what today one might call a broadly humanistic education, was as natural as wielding his sword. During the

[19]Ibid.

[20]This is not to say that Alexander did not err or that he spared all opponents. He made mistakes and was often ruthless. Nonetheless, he possessed a range of mental flexibility as a general and statesman remarkable then or now. See Carol G. Thomas, *Alexander the Great in His World* (Malden, MA: Blackwell Publishing, 2007), pp. 191 – 223; Guy MacLean Rogers, *Alexander: The Ambiguity of Greatness* (New York: Random House, 2004; Random House Trade Paperback, 2005); and J. F. C. Fuller, *The Generalship of Alexander the Great* (New Brunswick, NJ: Rutgers University Press, 1960; reprint, New York: Da Capo Press, 1989), pp. 264 – 305 (page citations to the reprint edition).

Hellenistic Age, Eratosthenes's idea was tested and commonly accepted. Following the fall of classical civilization, the reader may remember, Western Europe did not accept such an idea until the sixteenth-century of our Common Era, and even then, many viciously opposed the idea, as some still do today. What then does this tale demonstrate? It shows that despite certain strands of popular conventional wisdom, militaries have often been--and forgive the use of the following word--progressive organizations. But, such a state of affairs is neither birthright nor given.[21]

Why bother with such as story? Alexander's mind, whatever its faults, demonstrated that education, reflection, and the synthesis of knowledge about our world, peoples, and universe are fully compatible with military service. He surely relied upon coup d' oeil as well as reasonable calculations of supplies, lines of march, and battlefield terrain. Whether formal disciplines in his time or not, he called upon what we now call the social sciences and humanities, but it was his balanced perspective that has served him well through the ages.[22] The historian Carol Thomas contends that Alexander's broad understanding of his world and human mentality was the root of his success.[23] The claim here is not that a humanistic approach to strategy is necessarily superior to that rooted in formal reasoning; rather, it is at least equally important. Given the reality of the historical record and the employment of such thinking to successful strategy, it behooves young strategists to cultivate the humanistic approach of an Alexander.

A Complex Relationship: Strategy, Education, the Social Sciences, and History

Here it is necessary to clarify. Informal reasoning is just as capable of analytical and critical thought as is formal reasoning. Both forms of thought are important. For the strategist, the dichotomy between the social sciences and the humanities is false. Clausewitz understood this. He wrote:

> Circumstances vary so enormously in war, and are so indefinable, that a vast array of factors has to be appreciated, mostly in the light of probabilities alone. The man responsible for evaluating the whole must bring to his task the quality

[21]Sagan, *Cosmos,* p. 18.

[22]Sarkesian, *Sorcerer's Apprentice,* 234, 238. The author is inclined to agree with Sarkesian statement "there is little question about social science contributing understanding of society and human behavior," but as Albert Cherns warned, "we are in danger of overselling ourselves and our sciences." See Albert Cherns, *Using the Social Sciences* (London: Routledge and Kegan Paul, 1979), p. 367.

[23]See Thomas, *Alexander the Great,* pp. 191 – 223, passim.

> of intuition that perceives the truth at every point. Otherwise, a chaos of opinions and considerations would arise, and fatally entangle judgment. Bonaparte rightly said in this connection that many of the decisions faced by the commander-in-chief resemble mathematical problems worthy of the gifts of a Newton or Euler.[24]

Important within the above passage are the references to probabilities, an understanding of which a formal, scientific approach aides, and the reference to intuition, a quality not scientific but no less critically viable. With this, one may readily charge Brodie with having possessed an incomplete picture of what mental qualities a strategist needs. This would be unfair. Even while preaching the importance of a scientific approach to solving strategic problems, Brodie recognized the importance of intuition, asserting, "our experience thus far with scientific preparations for military decision-making warns us to appreciate how imperfect is even the best we can do. . . . We are dealing always with large admixtures of pure chance."[25] If for no other reason than to deal with chance, it is important for those teaching strategy to unify the social sciences and humanities.

Educating young strategists to blend formal and informal reasoning to solve strategic problems is difficult. To understand strategic challenges, the wise strategist must understand the strategic environment. This requires reflection upon and understanding that environment's people, anthropology, ethics, history, music, art, communications, technology, science, philosophy, religion, politics, the interactions of regions through the ages, and more. Such a list cannot be all-inclusive, of course, but herein there is a theme. All of these fields represent the activity of the human mind, making understanding that mind supremely important. For the strategist, the first step in understanding the strategic environment and the problems it presents is therefore to understand the minds of its people. For this, the prism of history is useful if for no reason other than history concerns itself chiefly with human thought. In attempting to understand the world as it is, a look at the record of human activity seemingly reveals themes throughout the ages that the astute observer may draw upon for intuition. Notice the emphasis on intuition, for understanding humanity is not any more or less a predictive science than what Clausewitz or Brodie would assert. It is an art as complementary to science as Clausewitz is to Sun Tzu.

For the strategist, the first step to understanding what to do about a threat or problem is to understand what is happening and why. Because strategic environments do not on their own accord use force to obtain political objectives, the crux of understanding adversaries and allies

[24]Clausewitz, *On War,* p. 112.
[25]Brodie, *Strategy in the Missile Age,* p. 407.

depends upon knowing something about translating human thought into action, the understanding of which is a classic definition of history, a Janus-like discipline sometimes surprisingly labeled as a social science and other times as residing within the humanities.[26] It is fair to ask what use is the record of human thought to strategy educators. Assuming that action results from thought, understanding how people think is crucial. Many valuable disciplines seek to do this, but if history is indeed the record of human thought and agency as Herodotus developed it, then humanism is of special importance to the strategist. History relates to educating strategists because it seeks to understand why humans thought the way they did to act the way they did, and the strategist does the same by seeking to solve problems by thinking clearly and acting upon those thoughts.[27]

History and strategy therefore interpret human thought and activity. The former explains what one thought and acted. The latter explains what to do in the present and after a time becomes the subject of study by those interested in such things. Strategy is therefore history in the making, further cementing its relation with the humanities. The historian and philosopher Robin George Collingwood maintained "the historian's thought must spring from the organic unity of his total experience, and be a function of his entire personality with its practical as well as its theoretical interests."[28] Substitute the word "strategist's" for "historian's," and one accurately describes a strategist's thinking. Most scholars classify strategy, security studies, international relations, and the like as social sciences, fields theoretically very different from the humanities. An examination of one definition of history reveals just how closely related are the social sciences and humanities. According to Collingwood, history is indeed scientific because it 1) begins by asking questions; 2) is rational and bases its answers to stated questions upon evidence; 3) is humanist because it asks questions about things done by people; and 4) is self-revelatory, that is, exists to inform humanity by examining thoughts and actions.[29]

---

[26]Works defining history and discussing its philosophy, nature, character, method, and value are numerous. The perspective presented here belongs to R. G. Collingwood, *The Idea of History* (London: Oxford University Press, 1956), pp. 1 - 10, 18, 302 - 308. The author's intent is not to denigrate other disciplines but to illuminate additional avenues for the reflective strategist to pursue. In this regard, many strategists, Dwight D. Eisenhower's mentor Brigadier General Fox Connor among them, emphasized the importance of studying history. As Connor believed and young Eisenhower accepted, such study was not simply to learn "what happened" but to reveal how humans think. See Stephen E. Ambrose, *Eisenhower: Soldier, General of the Army, President-Elect, 1890 – 1952,* vol. 1 (New York: Simon and Schuster, 1983), 76. The importance of learning how people think should be intuitively obvious to those educating student strategists on how to think.

[27]Collingwood, *The Idea of History*, p. 9 - 11.

[28]Ibid., p. 305.

[29]Ibid., *p.* 18.

Here we see, at least partially, the scientific method. Worth noting, however, is that the humanities-informed perspective neither makes models nor attempts predictive theory.[30]

Historians, social scientists, and strategists seek to understand the interior of an event. The interior represents the universe of thought that determined what occurred or what one hopes will occur. The exterior is simply what happened. At this point, it is worth addressing the old and mocking question, "what's new in history (or strategy)?" Those who ask this do not understand either discipline any more than those who blindly apply an old strategy in a new context simply because it worked before.[31] Strategic and historical narratives change, as do social science explanations, for a variety of reasons. The people who write them change; they discover new facts and observations; situations and contexts change; and they modify their theories. Collingwood addressed this, considering history an engaged reenactment of earlier thought expressed such that experts could debate the interpretation and thus bring scientific rigor but not predictability to the enterprise. His was a philosophical position, and not necessarily what the modern historian applies, but it clearly illustrates the ideal of seeking to

[30] Social scientists seek to model human events to explain, predict, and recommend courses of action. The historically informed strategist seeks to do the same but is suspicious of attempts to model and predict human activity based on quantified theory, claiming multivariate human events too complex for predictive theory. One may object to this as an historicist approach; however, the historical approach contends that completely understanding, insofar as possible, the contemporary and notional strategic environments should shape the strategist's approach such that the strategist makes reasonably sound decisions capable of absorbing unlikely, unforeseen, and confusing outcomes. This approach emphasizes the non-linear potential of human beings and seeks to account for unpredictability by understanding the human subject matter and its irrational tendencies. The gulf between the approach of the humanistic historian and contemporary social scientist regarding strategy is not as great as C.P. Snow suggested in *Two Cultures.*

[31] Sometimes an established approach may be effective in a new environment, although the rationale for this may differ. If not, there would be little for social scientists or historians to do because knowing something about the past would be meaningless. Blind application of old approaches to new problems exhibits poor thinking because it ignores contextual differences. As Collingwood once stated, "If minds change, as they do, this merely means that with the lapse of time a new situation has arisen. For a man about to act, the situation is his master, his oracle, his god. Whether his action is to prove successful or not depends on whether he grasps the situation rightly or not. If he is a wise man, it is not until he has consulted his oracle, done everything in his power to find out what the situation is, that he will make even the most trivial plan. And if he neglects the situation, the situation will not neglect him. It is not one of those gods that leave an insult unpunished. The freedom that there is in history consists in the fact that this compulsion is imposed upon the activity of human reason not by anything else, but by itself. The situation, its master, oracle, and god, is a situation it has itself created." Collingwood, *The Idea of History*, pp. 316 - 317. Regarding the modification or discard of previously accepted scientific theories, see Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2d ed., Foundations of the Unity of Science, ed. Otto Neurath (Chicago: University of Chicago Press, 1970).

understand the enemy's mind. If Sun Tzu was correct in stating "what is of supreme importance in war is to attack the enemy's strategy," then knowing the minds of the enemy's strategists is critical, and Collingwood's method possesses great utility in educating and training the modern strategist.[32]

At this point, the reader should object that despite some of the trappings of the scientific method, history, the humanities, and therefore informal reasoning, are no better than the historicist and positivist perspectives. Yet, even the assumed formality of the social sciences lacks. The physicist Stephen Hawking relates a "theory is a good theory if it satisfies two requirements. It must accurately describe a large class of observations on the basis of a model that contains only a few arbitrary elements, and it must make definite predictions about the results of future observations."[33] Hawking goes further, remarking, "a good theory . . . makes a number of predictions that could in principle be disproved or falsified by observation. . . . If ever a new observation is found to disagree, we have to abandon or modify the theory."[34] Herein lays the rub. When dealing with questions of national strategic importance, the practitioner of neither social sciences nor humanities can experiment in a controlled setting. Moreover, given that in the professions of arms such experimentation run amok would unethically result in the needless loss of lives, even the best of social science theories can be no more than models because they lack the verifiability of scientific experimentation. Of course, human action need not follow predictions. Human agency sees to that.

For the strategist's education, the idea that either the humanities or social sciences should dominate creates a false dichotomy. In reality, there must be better balance and admixing of the formal reasoning of the social sciences and the informal reasoning of the humanities. How to reconcile this? Regarding the systems analysts and economists of his day who declared themselves strategists, Brodie ruminated:

> Economists . . . have a theoretical training that in its fundamentals bears many striking parallels to strategic concepts. . . . The usual training in economics has its own characteristic limitations, among which is the tendency to make its possessor insensitive to and often intolerant of political considerations that get in the way of his theory of calculations. He is normally extremely weak in either diplomatic or military history or even in contemporary politics, and is rarely

[32]See Collingwood, *The Idea of History,* pp. 282 – 302 and Tao Hanzhang, ed., *Sun Tzu's Art of War: The Modern Chinese Interpretation* (New York: Sterling, 2007), p. 34.
[33]Stephen Hawking, *The Illustrated A Brief History of Time, Updated and Expanded Edition* (New York: Bantam Books, 1996; reprint, New York: Bantam Dell, 2007), 15 (page citation to the reprint edition). See also n. 26.
[34]Ibid., 18.

> aware of how important a deficiency this is for strategic insight. . . . The devotees of a science like economics, which is clearly the most impressive of the social sciences in terms of theoretical structure, tend to develop a certain disdain and even arrogance concerning other social science fields, which seem to them primitive in their techniques and intellectually unworthy.[35]

Brodie, who clamored for scientific rigor in national security strategy, realized the important utility of disciplines whose methods lacked a formal theoretical structure. History and the rest of the humanities matter for the perspective they provide in the strategist's education. He decried the lack of this in the strategists of his day, lamenting:

> Thus, where the great strategic writers and teachers of the past . . . based the development of their art almost entirely on a broad and perceptive reading of history, in the case of Clausewitz and Jomini mostly recent history but exceptionally rich for their needs, the present generation of "civilian strategists" are with markedly few exceptions singularly devoid of history.[36]

The successful strategist, as Clausewitz, Brodie, and Collingwood have demonstrated, requires knowledge residing in both the social sciences and the humanities.

A Contemporary Attempt to Educate Strategists

As educators, these are not easy tasks. The discipline of military and strategic studies as practiced at the United States Air Force Academy (USAFA) draws upon social sciences and humanities. It must blend the approaches of each to sustain a new discipline. Failure to do so results in an incomplete education. This generates creative scholarly and administrative tensions, but if the strategist is to be educated properly, the tensions are necessary. Lack of scientific rigor or the perspectives needed to understand the human mind precede strategic failure. It is not enough to equip the minds of young strategists with specialization in only either the social sciences or humanities. They need both; however, individual courses in behavioral science, history, political science, and the like will not refract their disciplines through the prism of strategy. Although courses such as these may touch upon the strategy and the context, theory, and application of military power to explain their unique concepts, they will not provide the education in how to synthesize these varied thoughts and apply them to

[35]Bernard Brodie, *War and Politics* (New York: Macmillan Publishing Co., Inc., 1973), 474 – 475.
[36]Ibid., p. 475.

contemporary and notional future strategic problems. This is the business of those teaching military and strategic studies.[37]

Although the Centre for Military and Strategic Studies and Royal Military College of Canada offer graduate education, the USAFA does not. USAFA is a four-year, undergraduate-degree awarding institution conducting education, training, and military commissioning missions. Each year, out of a graduating class of roughly 1,000 commissioned second lieutenants, fifteen-to-twenty matriculate with a bachelor's of science degree in military and strategic studies. This was a late development. In response to Chief of Staff of the Air Force interest, the USAFA created an interdisciplinary minor, then major, prosaically entitled Military Doctrine, Operations, and Strategy (MDOS) in the 1990's.[38] Given that an academic discipline results in a system of orderly behavior recognized as being characteristic of that discipline, the *multi*disciplinary "MDOS" did not contain much of such.[39] In fact, there was only one required MDOS course in the major, reflecting a lack of depth in doctrine, operations and strategy. In 2000, Military Strategic Studies (MSS) replaced MDOS to provide cadets with a "scholarly approach to understanding and investigating new knowledge, ways of working, and perspectives on the world around them."[40]

The original organizational placement of the MDOS and MSS departments reflected confusion. Organizationally, the USAFA has three main directorates governing the education, training, and development of its graduates. Of these through 2005, MDOS and MSS emplaced within the Cadet Wing (CW), an organization responsible for the military training of students. All other academic majors organized under the Dean of Faculty (DF), an organization similar to the collection of colleges found at most civilian universities. The organizational home of military and strategic

[37]The reality of human thought is that ideas know no boundaries, meaning a history course, for example, may well require a discussion of strategy to understand a topic. Conversely, a military and strategic studies course may examine the past of human thought, i.e. history, to test the relevance of an idea.

[38]The Air Force Academy organized MDOS as part of the 34th Education Group (EDG). Until reorganization under the Objective Wing Concept in 1994, the 34 EDG organized as a Division of Military Instruction that included military training roles and responsibilities. This organization designed and taught all professional military education courses, managed educational enhancement programs, and generally taught School of Advanced Air and Spacepower Studies concepts at the undergraduate level.

[39]Marietta Del Favero, "What is an Academic Discpline," available at www.answers.com/topic/academic-disciplines, accessed 1 July 2008.

[40]Ibid.

studies within an organization dedicated to training detracted from the faculty's ability to dedicate themselves--and their students--to the deep study of strategy.[41]

Surprisingly, not until 2005, four years into the Afghanistan War and two into the Iraq War, did the American Air Force's primary source of new officers change the situation.[42] In part, a study of other degree-awarding programs in military-related fields at universities across North America, Europe, Asia, and Australia highlighted the need for a contemporary-oriented military and strategic studies discipline.[43] The response was the development of a systematic program of study in strategy providing context and theory, as well as in-depth study of their application during military operations. Within the United States, such programs are unfortunately rare for undergraduates, but given the importance of military power to the American government, one easily understands their importance at a service academy, yet only one of the four U.S. service academies has such a program.[44] USAFA's military and strategic studies degree teaches cadets to think strategically and to organize and innovatively apply relevant concepts to a variety of operational challenges they will face in the security environment. The program blends strategic studies, classical and contemporary theorists, and intellectual currents with analysis of contemporary and notional future strategic challenges, as do those of the University of Calgary and Royal Military College of Canada.

[41]Thomas A. Drohan and Steven A. Pomeroy, "Who Speaks for Our Profession? Military and Strategic Studies at the USAF Academy," (USAFA, CO: Unpublished draft book chapter, 2010), 4 - 7 and Colonel Thomas A. Drohan, "EDG Options Historical Brief," Department of Military and Strategic Studies, Historical Records.

[42]Drohan and Pomeroy, "Who Speaks for Our Profession," 7.

[43]A short list of example programs includes: 1) in North America, Johns Hopkins University's School for Advanced International Studies, the University of Calgary's Centre for Military and Strategic Studies, Missouri State University's Defense and Strategic Studies, National Defense University's Institute for National Strategic Studies, and the Royal Military College of Canada's Military and Strategic Studies program; 2) in Europe, King's College's War Studies Program and London's International Institute for Strategic Studies; 3) in Asia, the Institute of Defense and Strategic Studies in Singapore, the Regional Centre for Strategic Studies in Sri Lanka, the Institute of Strategic and International Studies in Malaysia, and India's Centre for Asian Strategic Studies; 4) in Australia, the Australian National University's Strategic and Defence Studies Centre.

[44]The four American service academies include the United States Military Academy (West Point, New York), the United States Naval Academy (Annapolis, Maryland), the Coast Guard Academy (New London, Connecticut), and USAFA, the only one to offer a degree in military and strategic studies.

Conclusion

This is a difficult challenge. The new officers' forthcoming challenges upon commissioning are such the demands of deployment, daily operations, and technical training to develop tactical and later operational and strategic proficiency are simply all consuming. But, to be great as an Alexander, and even Alexander made mistakes, strategists cannot afford neglecting the reflective time needed to understand their universe, world, and place therein. One can become very good as an officer without contemplating such things or developing a philosophy of service, but one cannot become great. Moreover, the foundation a senior strategist requires demands an early lay down. Presently, a vocal group in the U.S. Air Force has bemoaned the lack of a service culture conducive to developing strategists.[45] They are right to do so. If a nation desires high-quality strategic thinkers, it must invest in them early. Military and strategic studies faculty and graduates must therefore make available the necessary time to study well in a variety of disciplines.

To this, the short argument concludes, a humanistic and scientifically informed approach encompassing many disciplines steeped by the thoughts of the military and strategic studies expert prepares well the young strategist for service, but there is something of deeper import here. This short commentary has traveled from the office of Hap Arnold to ancient Alexandria. Why? Your writer will now do something he cautions his students never to do. He will introduce a new contention in the conclusion. I assure you it relates to the topic. My final contention is that the strength of a free people comes from their education. For it is through education the people learn to ask courageous questions and to answer them with depth. As productive members of democratic republics, it is up to all citizens to do this, because in such republics, we all speak with equal import, thereby rendering the judgment "war is too important to be left to the generals" as ridiculous as saying "war is too important to be left to the politicians." War, perhaps the most human of all activities, is the thinking business of us all.

[45]Scott A. Bethel, Aaron Prupas, Tomislav Z. Ruby, and Michael V. Smith, "Developing Air Force Strategists: Change Culture, Reverse Careerism," *Joint Forces Quarterly* 58 (July 2010), 82 – 88.

References:

Ambrose, Stephen E. *Eisenhower: Soldier, General of the Army, President-Elect, 1890 - 1952.* Vol. 1. New York: Simon and Schuster, 1983.

Arnold, H. H. "Air Power for Peace." *National Geographic Magazine* 89 (February 1946): pp. 137 - 210.

Bailey, Holly and Evan Thomas. "An Inconvenient Truth Teller." *Newsweek,* 19 October 2009, pp. 30 - 35.

Bethel Scott A., Aaron Prupas, Tomislav Z. Ruby, and Michael V. Smith. "Developing Air Force Strategists: Change Culture, Reverse Careerism." *Joint Forces Quarterly* 58 (July 2010): pp. 82 - 88.

Brodie, Bernard. *Strategy in the Missile Age.* Princeton, NJ: Princeton University Press, 1959.

_____. *War and Politics.* New York: Macmillan Publishing Co., Inc., 1973.

Builder, Carl H. *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force.* New Brunswick: Transaction Publishers, 1994.

Cherns, Albert. *Using the Social Sciences.* London: Routledge and Kegan Paul, 1979.

Collingwood, R. G. *The Idea of History.* London: Oxford University Press, 1956.

Daso, Dik Alan. *Hap Arnold and the Evolution of American Airpower.* Smithsonian History of Aviation Series, ed. Von Hardesty. Washington, D.C.: Smithsonian Institution Press, 2000.

Del Favero, Marietta. "What is an Academic Discpline?" Available at www.answers.com/topic/academic-disciplines. Accessed 1 July 2008.

Drohan, Thomas A. "EDG Options Historical Brief." USAFA, Colorado: Department of Military and Strategic Studies, Historical Records.

Drohan, Thomas A. and Steven A. Pomeroy. "Who Speaks for Our Profession? Military and Strategic Studies at the USAF Academy." USAFA, Colorado: Unpublished draft book chapter, 2010.

Fuller, J. F. C. *The Generalship of Alexander the Great.* New Brunswick, NJ: Rutgers University Press, 1960. Reprint, New York: Da Capo Press, 1989.

Galula, David. *Counterinsurgency Warfare: Theory and Practice.* PSI Classics of the Counterinsurgency Era. Westport, Connecticut: Praeger Security International, 2006.

Hanzhang, Tao ed. *Sun Tzu's Art of War: The Modern Chinese Interpretation.* New York: Sterling, 2007.

Hawking, Stephen. *The Illustrated A Brief History of Time, Updated and Expanded Edition.* New York: Bantam Books, 1996. Reprint, New York: Bantam Dell, 2007.

Hughes, Thomas P. *Rescuing Prometheus.* New York: Pantheon Books, 1998.

Huston, John W. ed. *American Airpower Comes of Age: General Henry H. "Hap" Arnold's World War II Diaries,* vol. 2. Maxwell Air Force Base, AL: Air University Press, 2002.

Janowitz, Morris. "Military Organization." In *Handbook of Military Institutions.* Robert W. Little, ed. Sage Series on Armed Forces and Society. Beverly Hills, CA: Sage Publications, 1971.

Kilcullen, David. "Countering Global Insurgency.: Available at http://smallwarsjournal.com/documents/kilcullen.pdf. Accessed July 9, 2010.

Kuhn, Thomas S. *The Structure of Scientific Revolutions,* 2d ed. Foundations of the Unity of Science, ed. Otto Neurath. Chicago: University of Chicago Press, 1970.

McDougall, Walter A. *The Heavens and the Earth: A Political History of the Space Age.* Baltimore: The Johns Hopkins University Press, 1986.

Mumford, Lewis. *Technics and Civilization.* New York: Harcourt, Brace, and World, Inc., 1934.

Nagl, John. *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam.* Chicago: University of Chicago Press, 2002.

Rogers, Guy MacLean. *Alexander: The Ambiguity of Greatness.* New York: Random House, 2004; Random House Trade Paperback, 2005.

Sagan, Carl. *Cosmos.* New York: Random House, 1980.

Sarkesian, Sam C. "The Sorcerer's Apprentice: Social Science and the American Military." In *Tooling for War: Military Transformation in the Industrial Age.* Stephen D. Chiabotti, ed. Chicago: Imprint Books, 1996.

Snow, C. P. *The Two Cultures and the Scientific Revolution.* New York: Cambridge University Press, 1959.

Thomas, Carol G. *Alexander the Great in His World.* Malden, MA: Blackwell Publishing, 2007.

Von Clausewitz, Carl. *On War.* Michael Howard and Peter Paret, eds. Princeton, NJ: Princeton University Press, 1976.