LAW VS. SCIENCE: SHOULD LAW AS A CORE SUBJECT BE ELIMINATED AT THE U.S. ARMED SERVICES ACADEMIES IN FAVOR OF MORE RELEVANT STEM COURSES?

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So far, therefore, as my experience goes, I am totally at variance with the gentleman from South Carolina. He thinks that an army can as well be commanded by an ignorant as a learned man. This position I deny to be correct in military any more than in other affairs. There have been instances, it is true, both in ancient and modern history, of ignorant men, who cut a considerable figure in military pursuits. But experience has shewn [sic] that the fame acquired by such men has generally been obtained in operations against greater blockheads than themselves.

General William Henry Harrison

I. INTRODUCTION.

As Alvin Toffler argues as a theme in his 1970 epic *Future Shock*, change is the only constant in life. Almost four and one-half decades have passed since Toffler made this sweeping generalization, experience over that time confirms the veracity of the observation. Although cadets at West Point like to humorously characterize their Academy as “an institution unhampered by two hundred years of progress,” change comes inevitably to military academies like all other educational institutions.

The core curriculum is the academic heart of any educational institution. Military academies are not titled universities as they are expected to do more than just educate their pupils. They are missioned to “train, educate, and inspire” distinguishing them from civilian schools of higher learning. Though different in many aspects, most notably the requirement for public service upon graduation, their core curriculum is subject to the same requirements of civilian accrediting agencies. While the academies have greater total credit requirements for graduation than most civilian schools, they face the same “core war” battles when it comes to change in core curriculum. Unable to endlessly increase the ceiling graduation credit requirement, change necessitates a zero sum game transience. In order for something new to be added to the core curriculum, something old must be taken out. Despite every academic

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department claiming their core subjects are indispensable to the overall educated person, a reality check by external views may beg to differ. Nothing is immutable. Toffler’s point is well taken.

STEM (science, technology, engineering, mathematics) courses are on the march for inclusion in greater numbers in academy core curriculums. In order for new STEM courses to join the academic heart of academy learning, predecessor courses must be reviewed for relevancy, significance, and materiality. One core course in common at all three military academies is law. Treating all core courses with the same disciplinary respect in the review process, should law as a core curriculum subject be eliminated at the U.S. Armed Services’ academies in favor of more relevant STEM courses?

II. ACCELERATION IN THE COLLEGE OF KNOWLEDGE.

“Francis Bacon told us that “Knowledge …is power.” This can now be translated into contemporary terms. “Knowledge is change—and accelerating knowledge-acquisition fueling the great engine of technology, means accelerating change.”3 The news media, via new technologies of distribution, document change is a constant. “…[I]ndeed a growing body of reputable opinion asserts that the present moment represents nothing less than the second great divide in human history, comparable in magnitude only with that first great break in historic continuity, the shift in barbarism to civilization.”4 It might be argued that with the advent of global terrorism and its horrific assaults upon the innocents and lack of coherent legal response, there is a reversal of direction.

If it is true that there are five relationships that form the fabric of our social experience--things, places, people, organizations and ideas, that are the basic components of all situations, a person’s distinctive relationship to each of these components structures the situation.5 In a world quickly going mad, what role does law, in particular military law, play in structuring responses to such barbaric threats?

3 Id. at 31.
4 Toffler, supra note 2, at 14.
5 Id. at 43.
Faced with a constantly changing threat environment, has the need for STEM knowledge of today and tomorrow outdistanced the need for law of the past?

With respect to military training and its leadership institutions, there is a finite amount of time available for inculcation of new knowledge. When balancing the priority of one core subject with another with respect to things, places, people, organizations, and ideas, does the need for STEM knowledge outweigh the need for law? Perhaps yes, but possibly no.

III. HISTORY SPEAKS: HOW DID LAW FIND ITS WAY INTO THE THREE ARMED SERVICES ACADEMIES IN THE FIRST PLACE?

A. The U.S. Military Academy, West Point, New York (USMA).

Despite a long eight year Revolutionary War (1775-1783), hard lessons learned on the battlefield took time to mature into a professional standing army. Even though he never fought in the Revolution, Declaration of Independence author, Secretary of State under President Washington, and Virginia governor Thomas Jefferson merits the laurels for establishing the first military academy in the U.S. In 1802, President Thomas Jefferson founded the Academy as the first school of engineering in the country. The mission of the Academy then and now is "[t]o educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned Leader of Character committed to the values of Duty, Honor, Country; and prepared for a career of professional excellence and service to the Nation as an officer in the United States Army." Early regulations provided for "a course in Ethics [which] shall include Natural and Political Law." Engineering at the time was thought to be the science discipline most useful in warfare.

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6 An Act fixing the military peace establishment of the United States, Ch. IX, sec. 26-27 (Mar, 16, 1802).
“The study of natural and political law was intended to foster the intellectual and cultural growth of the cadets, as well as to develop their reasoning ability and instill in them the basic principles of a society based on the rule of law.”

Law, albeit “natural and political law,” made it to the head of the core curriculum line from the start. “Tellingly, the same Act of 16 March 1802 that established the U.S. Military Academy abolished the position of Judge Advocate of the Army.” For some unidentified reason, while law as an academic subject was prized, the value of military lawyers was held in different regard.

“Two years later, Congress passed a statute providing for "one Chaplain stationed at the Military Academy at West Point who shall be Professor of Geography, History and Ethics, with the pay and emoluments allowed a Professor of Mathematics." Thus the responsibility for teaching ethics, which included law, fell to the ecclesiastic vicar. “Fourteen years after Congress established the school at West Point in 1802, Academy regulations prescribed that "a course in Ethics shall include Natural and Political Law." The core curriculum, embodied in Academy regulations, carved out a conspicuous niche.

Core courses need texts and “The teaching of law at the Academy began in earnest in 1821, when a treatise called The Law of Nations by Monsieur De Vattel, was adopted as a textbook. Constitutional Law was soon added.” The chaplain was obviously doing a marvelous job of growing law as a core subject even in the absence of a military lawyer instructor. Consistent with Mr. Toffler’s aphorism about change, the law did just that—“The study of American constitutional law replaced natural law (which emphasized international law) in 1827, but by 1838 the course of study in law provided for instruction in

12 Id. at 27.
13 Id. 181 MIL. L. REV. 112.
14 Id. quoting Regulations of the United States Military Academy, 10 July 1816, at 112.
15 Goldstein, supra note 9, at 265.
both constitutional and international law.” 16 In 1867 Toffler struck again when “[t]he Academic Board discontinued instruction in the subjects of geography, history, and ethics and directed the Chaplain to focus solely on the teaching of international, constitutional, and military law.” 17 It is interesting to note early core subject horse-trading witnessed the importance of ethics exchanged for international, constitutional, and military law, all to be taught by the Chaplain no less. The Chaplain continued this mission until 1874 when the Department of Law was established at the Academy and judge advocates assumed law instruction responsibility. 18 Why the change? The Army and Navy Journal, which was a popular service periodical at the time noted: “The study of the general principles of law ... and the study of the Constitution of the United States and of the administration of justice in the Army ... have, since the Rebellion, become matters of primary importance [for] every individual holding a military commission.” 19

Fast forward to the present 21st century. “Law is currently taught to all cadets in the form of a core (required) course in Constitutional and Military Law (Law 403)..., the course currently incorporates the teaching of basic international law largely for the purpose of teaching all cadets the laws of armed conflict.” 20 Change has occurred in the law curriculum since 1874 as its development has kept pace with that of military law. 21 All cadets at West Point complete the same 26 core courses. Cadets not in one of the four major programs of this department [referring to the Electrical Eng./Computer Science Depts] and

16 Finnegan, supra note 11, at 113.
18 Finnegan, supra note 11, at 115.
19 Army and Navy Journal, 4 July 1874, at 745.
20 Goldstein supra note 9, at 262.
21 U.S. Military Academy Academic Program Class of 2017, Curriculum and Course Descriptions, Office of the Dean, 17-18, 212 (2014). Law 403. Constitutional and Military Law is a core course. This course studies the United States Constitution and the Military Justice System. Cadets will acquire information and skills in order to recognize and resolve constitutional and legal problems. The course provides analytical models for dealing with problems regarding societal and military order. Finally, the course seeks to enable the cadet to make an intelligent commitment to the values and preferences embodied in the Constitution and our system of military and civilian law. Examples from military law are used to model fundamental principles examined in the course. Significant court decisions are explored to support the course goals. Specific substantive areas include: separation of powers, judicial review, war powers, equal protection, privacy, individual rights, searches and inspections, military justice processes, and military criminal law. 3.5 cr.
not in one of the other engineering programs at West Point must complete an additional four core courses. The core curriculum ranges from 87 credits to 99 depending on the major.\textsuperscript{22} The estimated cost of attending four years at West Point is $200,000-$250,000 per cadet.\textsuperscript{23}

\begin{enumerate}
\item The U.S. Naval Academy, Annapolis, Maryland (USNA).
\end{enumerate}

While the Army at the turn of the 19\textsuperscript{th} century persuaded the White House and Congress it needed an institution to nurture a professional officer corps, arguments favoring establishment of a naval academy had to be made, remade, and argued again over 43 years.

In his second annual report to Pres. John Quincy Adams, Secretary Southard argued the Navy’s case for its own Academy in 1824 observing: “To these ought to be added a revision of the law for the better government of the Navy, and the system of Courts Martial. But especially some provision should be made for the education and instruction of the younger officers. We have now the light of experience on this point in the army, and its salutary effects are very manifest Instruction is not less necessary to the Navy than the Army.\textsuperscript{24}

Meeting congressional resistance, Secretary of the Navy Southard argued strenuously that naval officers must begin to develop such good sense, good will and excellence with an early, formative education at a Naval Academy: Educated in such a school as it becomes the government to establish, moral principles are secured, good habits formed, subordination learned, honorable feelings encouraged and confirmed, skill acquired, science and discipline necessarily combined.\textsuperscript{25}

\textsuperscript{22} These four courses are IT305 Theory and Practice of Military Information Technology Systems, taught by this department to cadets in the Second Class year in addition to one of seven three-course engineering sequences chosen by cadets at the beginning of the Third Class year. (p. 57) To satisfy the academic portion of these graduation requirements, a cadet must:
\begin{itemize}
\item Complete successfully or validate each course in the core curriculum, including the common core courses and a core engineering sequence;
\item Satisfy the requirements of at least one major;
\item Complete successfully 40 (30 are core) academic courses; complete successfully the eight military science courses and the program of Physical Education presented under the Office of the Commandant (p. 22)
\end{itemize}

\textsuperscript{23} See http://usnews.nbcnews.com/_news/2013/02/14/16966278-army-wants-outspoken-west-point-cadet-to-pay-up.


\textsuperscript{25} \textit{Id.} Southard, "Opinion of the Secretary of the Navy, 1825," at 45. \textit{Quoted in} Hussey, at 40.
Perhaps some of the congressional resistance can be traced to social and culture class distinctions. John Freeman Hussey III authored a history of the Naval Academy observing: “The history of naval education and character formation presents a unique challenge to the notion of cultural shifts, given the contrasting professional and ideological demands made upon the American naval officer: he must be liberally accomplished yet technically esoteric, practically driven but theoretically buoyed, a servant to democracy, but in structure and heritage an aristocrat.”

Despite the aristocrat debate, naval line officers joined the argument for establishing a professional school for naval officers. In 1836 Lieutenant Matthew Fontaine Laury, a young line officer, argued sea service

… [E]ntertains the prospect of, and explains the need for, a Naval Academy: I say it is the part of wisdom to provide instruction for the officers - to afford the means for the attainment of knowledge, practical and theoretical, to see that they are taught not only nautical science, but at least, so much of the laws of nations, as will enable them to know what are the relative rights of their own country, and of other nations - what our obligations, and what theirs.

It took the Barbary pirates to convince political leaders that a Naval Academy was as much in need as a Military Academy. The Naval Academy can trace its heritage to 1845, when then Secretary of the Navy George Bancroft founded the Naval School at Annapolis, Maryland. “The mission of the United States Naval Academy is to develop midshipmen morally, mentally and physically and to imbue them with the highest ideals of duty, honor, and loyalty in order to provide graduates who are dedicated to a career of naval service and have potential for future development in mind and character to assume the highest responsibilities of command, citizenship and government.” The Marine Corps is part of the Department of the Navy so potential Marine officers are trained there as well. “The overall curriculum

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26 Id. at 25.
27 Id. at 150.
29 Hussey, supra note 24, at i. 23.
supports the moral and mental preparation of midshipmen and provides them with the skills and knowledge they will meet to be successful as junior officers in the United States Navy and Marine Corps.”

Like the Military Academy, the curriculum at the Naval Academy had to start somewhere. With an eye to the sea as opposed to land warfare, a different approach was called for. “As the Naval Academy curriculum evolved, these competing educational goals [professionalizing and civilizing] emerged as struggles between civilian professors and military staff. Mark Hunter recounts early contention within the faculty over the value of a practical versus a "mind-broadening" (i.e. liberal) education.” It is foreseeable that civilian professors may have a different view of what a core curriculum should contain than their naval instructor counterparts. One set of faculty have been to sea, the other has not. This difference in professional experience might understandably color a faculty member’s view of needed core courses by seafarers. “Executive Officer Lieutenant James Ward wrote to Superintendent Buchanan on 13 August 1846, contrasting the scholarly backgrounds of the professors and the more active lives of the midshipmen and officers. Ward recommends a more practical (that is polytechnic) education, shifting the merit weights and progression of the courses accordingly.”

John Freeman Hussey’s historical review of Naval and Military Academy education suggests “There is no curriculum for greatness…” He has a point, yet upon reflection there is no small number of graduates of both the Naval Academy and Military Academy whose national service has earned them a place in American history. They not only consist of war heroes, but presidents, congressmen, senators, and business and scientific leaders. Considering the small number of graduates (approximately 900) compared to many civilian institutions, their numbers of distinguished graduates makes an historic

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31 Id.
32 Hussey, supra note 24, at 248.
33 Id.
34 Id. at 82
statement. Hussey poignantly observes “If, as has been argued, one educates toward a desired end, then the end envisioned will influence the kind of education one provides.”

The first Naval Academy Superintendent “…called for classes in mechanics, nautical surveying and naval tactics, as well as drawing, and he limited bellettristic study to maritime law and history.” Law of the sea arguably is as important to the naval officer as law of land warfare is to the army officer. While the executive branch established the Naval Academy in 1845, it had to wait until 1850 to receive congressional sanction. Inheriting British naval custom, American midshipmen customarily went to sea first to learn nautical training, but that changed with the new Naval Academy. “The school soon boasted a continuous four-year program more closely resembling West Point's; midshipmen matriculated immediately after receiving their appointments rather than first going to sea.”

Like the Military Academy, its naval counterpart evolved its law instruction from simply maritime law to broader legal subjects. “By the late 1850s, midshipmen studied subjects as varied as "Descriptive Geography," composition, astronomy, "Mechanics of Liquids and Elastic Fluids," the "Use of Water Colors," and constitutional and international law.” This too has evolved over time, but the Naval Academy maintains a core law course NL 400, Law for the Junior Officer, which contains a broad array of legal topics. This course is one of a ninety-credit core curriculum within a total 139-145 credit graduation requirement.

35 Id. at 87.
36 Id. at 245.
37 Id. at 249.
38 Official Register of the Officers and Acting Midshipmen of the United States Naval Academy, June 1858 (Washington, DC: William A. Harris, 1858) 13-16.
39 See http://www.usna.edu/LEL/Courses/#law. NL 400. Law for the Junior Officer. Core course. This course provides a broad survey of military law applicable to the junior officer. Students examine operational law concepts including the Law of Armed Conflict and the Law of the Sea. The course also explores a variety of military justice topics including constitutional issues such as search and seizure and self-incrimination, judicial and non-judicial forums and the administrative separation of enlisted service members from the Navy and Marine Corps.
40 A midshipman needs at least 15 credits/semester and 139-145 credits to graduate. Source (USNA_Total Courses.ppt) Unlike most civilian universities, the Naval Academy must graduate a midshipman within four years, which makes the ninety-credit core curriculum—only part of the roughly 140-credit total program of study. See http://www.usna.edu/InternationalProgram/_files/documents/Educating%20Warriors%20Globally%20Engaged%20and%20Culturally%20Aware.pdf#search=core credits.
According to the Naval Academy public affairs office, for FY 2008, the cost of educating a midshipman for all four years is $378,697. They pointed out that this number includes everything – tuition, books, fees, stipend, food, medical care, etc.  


Arriving late to the Academy establishment party, the Air Force Academy had to wait for the Air Force to be created. Originally part of the Army Air Force, the Department was established as a separate service in 1947 after its mesmeric growth during World War II. While the USAFA was established in 1954, cadets did not move into the 18,500 acre site until 1958 when construction of the new facility was completed in Colorado Springs. The mission of the Air Force Academy is to “[E]ducate, train, and inspire men and women to become officers of character motivated to lead the United States Air Force in service to our nation.”

Modeled after the Military Academy curriculum, law was a core subject from the start. Today a three-credit course is taught during the cadets’ third class (sophomore) year. It is titled Law 220, Law for the Air Force Officer, providing a survey of civilian and military law. When examining the USAFA...

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44 See http://www.academyadmissions.com/wp-content/uploads/2012/05/Courses_LegalStudies.pdf Law 220. Law for Air Force Officers. A core course introducing students to the legal knowledge and skills they will need as Air Force officers and educated citizens. Examines the nature of law and its role in American society and the military; provides an overview of the American civilian and military justice legal systems; examines selected foundational constitutional rights, particularly as they apply in the armed forces; and introduces substantive areas of the law that military officers likely will encounter in their official capacities, including criminal law, military administrative law and the law of armed conflict. See also USAFA Curriculum Handbook, 2014, at 290 (2014). Law 220S. Law for Air Force Officers. 3(1). A core substitute for cadets in the Academy Scholars Program, introducing them to the discipline of Law through readings from original classic works and appellate court opinions exploring principles they will apply as Air Force officers and educated citizens. Examining the nature of law and its role in American society and the military, the course emphasizes enrichment in critical thinking and verbal and written expression by addressing foundational principles of constitutional, criminal, military, and international law. Classroom discussion and debate are the primary pedagogies and written works are the significant assessments. Final paper, final project, or final exam. Sem hrs: 3.
core curriculum as a component of the overall course of study, the core curriculum accounts for 101 of the 140-149 credit graduation requirement. The USAFA core curriculum consists of 32 three semester hour core courses, and five semester hours of physical education courses for a total of 101 semester hours of core. The courses form an intentional, coherent whole which is organized developmentally to promote learning and growth in three main content areas: Culture and Global Awareness, Leadership and Human Behavior, and Science and Technology. The total cost per USAFA graduate over four years is $444,984.

IV. NEED FOR CORE CURRICULUM CHANGE—OUT WITH THE OLD, IN WITH THE NEW KNOWLEDGE.

Education, training, and even inspiration costs money. As noted above, education at each Academy far exceeds that of an $180,000 R.O.T.C. education. How much is too much for an Academy graduate? Especially in view of congressional sequestration, the Department of Defense (DoD) has undertaken painful budget reduction analysis affecting the academies. Each of the academies has a Board of Visitors (BOV) made up of congressmen, senators, and national business and former military leaders. Their annual report is made to the President so it provides impartial analysis on the state of the Academy including its fiscal affairs. Each Academy has a separate BOV. The Academies are not exempt from ongoing fiscal scrutiny and belt tightening.

A reduction of an additional $6 million from the [USMA] base budget is a reflection of the civilian pay cut that accompanied the drawdown of personnel. This drawdown affected mainly administrative staff. Seventy-one positions were cut. Almost all personnel have been successfully placed in

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45 The 2014 United States Air Force Academy Board of Visitors Report to the President, at 11.
48 Ausiello, supra note 41.
other positions, although remaining personnel may face a reduction in force (RIF). West Point is currently examining positions for another ten percent reduction to help the Army reach its budget cap and pay for required positions, such as installation Victim’s Advocates. To meet this target, USMA must identify functions that it will no longer perform.\textsuperscript{51}

Core curriculum requires faculty, staff support, and facility management, to name only a few fiscal needs. The 2011 USMA Board of Visitors report claimed “Funding Constraints Jeopardize Science Education at West Point. The likelihood of further cost pressures, unless mitigated, will exacerbate resource constraints that already jeopardize the Academy’s academic mission.”\textsuperscript{52}

Relevance, significance, materiality, and now change copeability should be used to determine whether a core subject merits retention and fiscal resources. While every core subject such as English, history, modern languages, and even law will have zealous advocates arguing these subjects are indispensable to an educated officer, reality dictates that for any new subject to be added, a predecessor must be abandoned. “[F]or education the lesson is clear: its prime objective must be to increase the individual’s ‘copeability’—the speed and economy with which he can adapt to continual change. And the faster the rate of change, the more attention must be devoted to discern the pattern of future events.”\textsuperscript{53}

Cyber warfare, and the knowledge skillset needed to engage in it, readily qualifies for “copeability” consideration as a core curriculum subject. Within the STEM realm, cyber warfare qualifies as a technology subject.

The Navy and its Academy have seized upon the subject of cyber warfare with a futuristic tenacity seeking to imbed this program as a core curriculum subject. This gives them the lead in that “copeability” academic race.

The Department of Defense has substantially increased its emphasis on the military’s ability to operate in a cyber/information war environment…Concurrently, the need for cyber security within the naval services requires the Academy to adapt its educational offerings to reflect emerging requirements that Academy graduates

\textsuperscript{52} 2011 Annual Report United States Military Academy Board of Visitors, at 3.
\textsuperscript{53} TOFFLER, \textit{supra} note 2, at 357.
be prepared to take a leadership role in the Navy’s fight for cyber security. As a result, the Academy is undertaking several efforts to ensure that future graduates are invested with the skills and knowledge necessary to operate effectively and immediately in the cyber warfare environment... In order to infuse cyber warfare topics into the academic curriculum available to the entire student body, the Academy is pilot testing a new Fundamentals of Cyber Security course intended for students in any academic major. This latter course is serving as a test case to explore the benefits of adding a possible new cyber security course to the required core curriculum for all students....

As a consequence of the pilot project, the Naval Academy implemented a change in the core curriculum adding cyber security courses. With the support of Navy leadership, the Naval Academy modified its core academic program to include not only one, but two courses in cyber security. The core academic program required of all midshipmen includes two courses in cyber warfare. The first is taken during the plebe (freshman) year and the additional one the second classmen (junior) year. Both courses are considered STEM technical subjects, and provide hands-on experiences in both lectures and extensive laboratory periods.

The interest in STEM subjects started a tectonic reappraisal of Naval Academy curriculum with major revisions. Coming from outside the Naval Academy, in October 2007 the Chief of Naval Personnel directed that, beginning with the graduating Class of 2013, no fewer than 65 percent of all graduates commissioned into the Navy from the Academy must have completed academic majors in STEM [science, technology, engineering, mathematics] disciplines. Justification was based on the Navy’s recognition this requirement reflects the national concern that our nation’s colleges and universities must educate more students in these technical disciplines.

The U.S. Air Force Academy was not immune to the same national concern. “The United States Air Force is a service born of technology, and throughout its history, technology has remained central to its...
identity and power. From the start, visionary leaders realized the importance of technologically focused education to advancing airpower.\textsuperscript{58} Looking to the future, the Air Force is fixed on its rapidly changing environment.

As advances in technology have led the Air Force into the new domains and challenges of space and cyberspace, the role of delivering defense oriented technical education has become even more critical. In this process, leveraging our network of science and technology partners to produce technically educated and operationally focused Airmen has proved as significant as the advances themselves. Because demand for these graduates continues to increase, deliberate investment in science, technology, engineering, and mathematics (STEM) education must also increase.\textsuperscript{59}

Reflecting on this topic, the 2011 USAFA BOV report noted “…Curriculum is driven by a series of Academic Program Goals which are currently undergoing an external review to assess and gather feedback on whether these goals are right for the coming years.”\textsuperscript{60} Then USAFA Dean of Faculty “BG [Dana] Born presented an update on STEM to the BOV.

She stated U.S. students are falling behind in pursuing STEM type degrees in comparison to foreign nationals. While international students have increased STEM degree pursuits by 46% the United States has only increased by 8%. The National Research Council Report stated indicated that cadets should become more STEM cognizant, have 24–30 hours [credits] dedicated to STEM type courses. Currently, cadets take 45 hours related to STEM and has the highest related percentage of STEM graduates.\textsuperscript{61}

A year later the BOV report noted “LT GEN Gould [USAFA superintendent] praised Academy athletics and shared the Academy’s focus across the next year on curriculum review.” But he went on to say “that per Gen. Welsh’s request [Air Force Chief of Staff], the Academy’s leadership is discussing the curriculum through a clean slate concept. For example, if we were to start fresh and build an Air Force Academy in the future what would we teach cadets?”\textsuperscript{62} Prophetically prescient “Unlike air and space


\textsuperscript{59} \textit{Id.} Focusing on its military purpose, Air Force leaders argue “Today, as yesterday, experienced Air Force leaders with a defense-focused technical education are essential to maintaining our military supremacy, ….”

\textsuperscript{60} The 2011 United States Air Force Academy Board of Visitors Report to the President, at 150.

\textsuperscript{61} \textit{Id.} at 23.

\textsuperscript{62} The 2012 United States Air Force Academy Board of Visitors Report to the President, at 23.
domains, the cost of entry to exploit cyberspace is low, yet the potential damage to the national security and economy is enormous. The complex cyberspace domain evolves at an astonishing pace.”

If agreement can be had that these things matter in war, then a deeper review is warranted to determine the depth of the STEM need.

A recent report by the National Research Council of the National Academies identified the loss of technical competence within the Air Force as an underlying problem in several areas of science, engineering, and acquisitions. At the same time, the Report on Technology Horizons, Headquarters US Air Force’s vision for science and technology, recognizes that the capabilities we need also lie within the reach of potential adversaries because of their access to the same science and technology.

Almost from its nascence, “…Gen Henry “Hap” Arnold realized that scientists and engineers were the kind of people who would bring him the ideas he needed.” The Air Force argues that “Technology is part of Airmen’s DNA.” There are no proponents yet identified who claim law is part of anyone’s DNA.

V. THE CORE WARS.

“If technology, however, is to be regarded as a great engine, a mighty accelerator, then knowledge must be regarded as its fuel.” In order to make room for STEM (science, technology, engineering, mathematics) knowledge conveyed through an Academy’s core curriculum, something must exit. If it is all about war, then STEM subjects must bring to the officer education table new scientific warfare knowledge that is relevant, significant, material, and adds copeability in a highly dynamic global

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63 Givhan, supra note 58, at 13.
64 Id. at 15.
65 Id.
66 Id. 15-16. “Technology is part of Airmen’s DNA. Our first leaders realized that fact even when the technology of flight was in its infancy. They also understood the importance of defense-focused technical education to carrying out our mission and to sustaining the Air Force our nation needs to attain its strategic goals. Advances in science and technology that have led us into new domains confirm the wisdom of that vision and the necessity of doing even more in this regard to preserve our edge and competitiveness.”
67 TOFFLER, supra note 2, 29-30.
environment. This must promote success on the battlefield or sea or the point of the exercise is of little warfare value. In an early core war battle on this subject

    Future President William Henry Harrison argued in a debate on the floor of the U.S. Senate, “Whatever the experience of other Generals may have been... I can say for myself that, had it not been for the science and skill obtained at a Military Academy, I should probably never have enjoyed the honor of addressing this body. I feel proud to say that the defense of Fort Meigs, at which I commanded, chiefly depended upon the scientific exertions of a man to whom it is due that his worth should be here attested by me.\textsuperscript{68}

    Reaching back even further in American military history, “Harrison goes on to detail the losses during the 1812 war attributable to a lack of military science.” He poignantly argues "It was admitted by every military man that science in war was indispensable, and that it was far more essential than bravery; while bravery, without it, was never sure of success."\textsuperscript{69} In the 21\textsuperscript{st} century, is this not even more evident? The core wars are a fight for the academic soul of the educated officer. Stepping back trying to identify holistically what that education should consist of, USMA graduate Ulysses S. Grant, president and Civil War Union Commander cryptically observed “Praising the efficiency of Sherman’s own army on its celebrated March to the Sea [Grant] he said, “He had sixty thousand as good soldiers as ever trod the earth; better than any European soldiers, because they not only worked like a machine but the machine thought. European armies know very little [about] what they are fighting for, and care less.”\textsuperscript{70} A thinking machine led by thinking commanders, but what core curriculum produces such officers?

    A civilian English professor at West Point reflected on this salient question after the Iraq War commenced. Initiation of armed conflict predictably has an enormous impact on the academies as their upcoming graduates will be vesting their lives in a life and death profession. Facing combat and the horror of what that implies, graduates value their well-being like anyone. They reflect deeply on what

\textsuperscript{68} Gradual Improvement of the Navy, at 512, quoted in Hussey, supra note 24, at 89.
\textsuperscript{69} Gradual Improvement of the Navy, at 514, quoted in Hussey, id. at 89.
\textsuperscript{70} ELIZABETH D. SAMET, SOLDIER’S HEART: READING LITERATURE THROUGH PEACE AND WAR AT WEST POINT (2007), at 124.
skills and knowledge they need to have to survive in an increasingly unpredictable and changing global 
environment. "Since the war began [Iraq], I have often wondered exactly what cadets most need, but the 
rejection of the value of a liberal education in a time of war betrays the rich and vital connection between 
education and military service."71 This is easy for a faculty member to say far from the battlefields or 
seas that produce a modern day Armageddon, but does a liberal education including the study of law 
outweigh other more practical needs that can better be addressed by STEM curriculum? She concedes 
“Along with modifications in military training made to keep pace with current operations—learning to 
defuse IEDs, for instance—there have been adjustments to the academic curriculum such as the addition 
of minors in regional studies and in terrorism studies, in order to meet the urgent demands of the 
profession.”72 In order to make way for these contemporary changes, older subjects had to be jettisoned. 

Despite its headlong dive into cyber security, voices within the Navy warned its intellectual balance 
was listing.

The Navy certainly needs scientific and technological skills to maintain its superiority, but this should not come at the expense of the crucial, although less quantifiable, insight and skills that can only be developed through education in the humanities and social sciences (HUM/SS). To prepare future leaders for their increasing role as diplomatic peacekeepers and to bring much-needed intellectual diversity to the Fleet, the Navy should find a more equal balance between STEM and HUM/SS education, increase language education, and trust in core curricula to produce well-rounded officers from all majors.73

The need for change mandates new thinking. “As was the case with … development of the ICBM 
force, these advances can occur efficiently and effectively only with the guidance and vision of leaders 
who have a solid grounding in science and technology that includes technologically focused education.”74

71 Id. at 82.
72 Id. at 75.
74 Givran, supra note 58, at 15.
VI. THE THINKING OFFICER. WHAT PRODUCES SUCH A PERSON?

This brings us back to the thinking officer. If that is the what core courses need to produce, what subjects promise to provide relevance, significance, materiality, and copeability in winning today’s wars? In defense of her current liberal education cadet graduates, Dr. Samet argues “In short, they know when to fight and when to think, when to have faith and when to doubt.” While STEM courses offer thinking curriculum, rational thinking liberal education offers a different context. “A disciplined, obedient officer is a fine thing, indeed an essential thing for the nation’s defense, but a blindly obedient robot who struggles to suppress his own conscience in the face of mounting piles of contrary evidence is an anachronism from old imperial (or more recent fascist) armies…. The debate between STEM vs. liberal education courses including law can be seen as circular and endless. Perhaps another analytical approach is needed in developing a thinking officer through core curriculum. That approach might be considered value centered. What values do we seek in military officers and what core curriculum courses might be better suited to produce those values?

Value turnover is now faster than ever before in history. While in the past a man growing up in a society could expect that its public value system would remain largely unchanged in his lifetime, no such assumption is warranted today, except perhaps in the most isolated of pre-technological communities. This implies temporariness in the structure of both public and personal value systems, and it suggests that whatever the content of values that arise to replace those of the industrial age, they will be shorter lived, more ephemeral than the values of the past…For the foreseeable future, we must anticipate still more rapid value change.77

Rapid value change—copeability surfaces again. This portends even more challenging subject matter analysis. “The Army is a difficult church in which to worship; it damns as it saves.”78

Entrustment of lives, equipment, weapons, ships, aircraft, demands a heavy commitment from military

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75 SAMET, supra note 70, at 163.
76 Id. at 125.
77 TOFFLER, supra note 2, at 269.
78 SAMET, supra note 70, at 170.
leaders. The value and nature of STEM courses are obviously transient while law is at the other end of the spectrum. But why do we not call a military academy a university that teaches both? Is it because an academy is a trade school? Reflection brings us back to each Academy’s mission, which revolves around the values of training, education, and inspiration. This is much more than a university or trade school offers its pupils.

Since core curriculum change and STEM advocates recognize core change as a zero sum game, why cannot law be taught elsewhere? All service officers are required to attend a professional and/or specialty training course upon graduation from an Academy. In addition, there are annual training requirements involving sexual harassment, equal opportunity, Geneva Convention, and a litany of other subjects that might be a better forum liberating at least one 3 credit core course at each Academy. Then there is realism. No longer ensconced in an academic citadel divorced from the pressing experiences of actual military service life, new officers could learn military law in a much more practical setting (on the job training) outside the sterile confines of classroom life. Such core course transition can readily provide the academic space necessary for STEM growth in cyber security, IED detection, drone surveillance, and anti-terrorism related subjects, to name only a few. The value of law could be inculcated in a more relevant, significant, material, and copeable environment affording experiential learning. After all, is it not true that

Globalization, accompanied by reliance on resources, solutions, and human capital outside our borders, increasingly challenges our effort to maintain technical dominance. Technical innovation is at risk unless we continue to develop an indigenous pool of scientists and engineers from which the DOD and Air Force can draw to meet their needs.79

VII. WHAT VALUE DOES LAW INSTRUCTION HOLD IN AN INCREASINGLY TECHNOLOGY DRIVEN GLOBAL ENVIRONMENT?

79 Givhan, supra note 58, at 14.
While beauty and public service may be in the eye of the beholder, Academy attendees voluntarily give up this discretion. Unlike their college and university counterparts, cadets and midshipmen take an oath that serves as a prelude to their commitment to public service in defense of their nation. “The Constitution requires commissioned officers to swear an oath to support and defend its principles. Those officers must understand the meaning of that oath, their essential role in protecting the liberty of all citizens, and their duty to uphold and enforce the law in a society and country based on the rule of law.”

Additionally, it is important to note as a matter of federal law that officers in the military wield extraordinary legal power. They must understand not only the nature and limitations of this authority, but they must respect the concept of civilian rule of the military, and recognize their oath to defend the Constitution of the United States. In line of duty that may be unforeseen, they may be asked to give some important part of their life, while others will be asked to give all. When should such law instruction occur—on the job or at the beginning of their officer education journey?

What do cadets think of the relevance, significance, materiality, and copeability of their Academy law instruction? “Cadets noted that studying law developed the capacity to think logically, stimulated intellectual curiosity, imparted a sense of values, and taught the application of knowledge to practical problems.”

Bearing in mind cadets and midshipmen are anything but oblivious of going in harm’s way upon graduation, “It is also important to understand that an officer, especially one who is likely to be deployed to a combat setting, must have carefully honed critical thinking skills to allow for rapid decision making. A high level of critical thinking is essential in making decisions based on rules that can have life-or-death consequences.” What role does law play?

Lt. Gen. Frank S. Besson, Jr., a 1932 USMA graduate who served in both the European and Pacific Theaters during World War II, recalled the importance of his instruction in law: “A knowledge of the basic principles of law has been invaluable to me in my

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80 Finnegern, supra note 11, at 131.  
81 Goldstein, supra note 15, at 266.  
82 Finnegern, supra note 11, at 120. See also The Howitzer, Class of 1941, at 53.  
83 Goldstein, supra note 15, at 274.
military-service. I believe that in my day-to-day administrative problems, no single subject taught to me at the Military Academy with the exception of English has been more directly applicable."\textsuperscript{84}

History can sometimes be prologue. There is significant World War II (WWII) battlefield experience to underscore the relevance, significance, materiality, and copeability of law in a wartime setting. “West Pointers typically were the “only officers with legal training to be found in a unit - especially in the occupied territories.”\textsuperscript{85} While somewhat biased, even a WWII veteran Major Gen. Charles Decker, a 1931 USMA graduate serving as The Judge Advocate General of the Army, was unequivocal in his support for a strong Academy law curriculum:

I am convinced that the study of law at West Point does contribute to the graduate's overall education and cultural background and does materially assist him in solving the military and administrative problems he encounters throughout his military service. If a poll were taken of any group of West Point graduates I believe there would be few dissenting voices... While I believe the [law] course at West Point is essential for other reasons, its inclusion in the curriculum can be justified for its scholarly and intellectual values alone.\textsuperscript{86}

Curriculum review and consideration of deleting law as core subject has previously been considered at West Point.

In 1963, the Superintendent, Maj. Gen. William C. Westmoreland, ordered a review of the law curriculum. He formed an ad hoc committee and directed its members to analyze three options: maintain the curriculum as currently structured; increase the emphasis on legal training while reducing the emphasis on legal education; or provide minimal law instruction during the academic year under the supervision of the USMA Staff Judge Advocate with supplemental training during summer training periods. Although the orders appointing the committee directed that they make no specific recommendations, the committee report stated, "It would not be in the

\textsuperscript{84} United States Military Academy Report of the Superintendent's Ad Hoc Committee on the Coverage of Law at the Military Academy (1963), Letter to the Committee from Lt.Gen. F. S. Besson, Jr., 67. At the time he wrote the letter, Besson commanded the Army Materiel Command.


\textsuperscript{86} Finnegan, \textit{supra} note 11, at 123.
best interest of the United States Military Academy to reduce the current coverage of law."\textsuperscript{87}

Even though directed not to make specific recommendations, the ad hoc committee nevertheless chose to do so. This courageous move makes a statement. Perhaps another Academy graduate (1939) and former Supreme Allied Commander, Europe (NATO), General Andrew J. Goodpaster captured the ad hoc committee’s law curriculum review reasoning. He came out of retirement in 1977 to serve as the Superintendent of USMA insightfully observing “I have found over the years that my law course was of very great value to me.... [A]n understanding of the principal structure of law is essential equipment for an Army officer if he is to be effective within a unit, on higher staff, or as a military representative in the highest circles of government.”\textsuperscript{88} Referring to the need for a “thinking” officer, General Goodpaster poignantly recounts:

\begin{quote}
I am constantly interested to see that in important areas of the military profession, the fine points turn out to be the key points, and precision of thought is essential. Law certainly conditions and disciplines the mind in that direction. At the same time, an understanding of law in its relation to the Constitution, and hence to the process of self-government in its basic sense, is indispensable in the military profession within a democracy.\textsuperscript{89}
\end{quote}

While anecdotally supportive of retaining law as a core curriculum subject, what does law offer the “thinking” mind that STEM courses may not? Do the rules in war matter? While a rhetorical question, first and foremost Academy officers are being trained to be warriors on land and sea. Hence, the rules of warfare take on an elevated space in core curriculum education. President Herbert Hoover argued that “Education has for its object the formation of character.”\textsuperscript{90} In war, character matters. USMA English professor Dr. Elizabeth Samet recounted a story involving one of her former students who had just

\textsuperscript{87} Id. 122-123.
\textsuperscript{88} Report of Ad Hoc Committee, 80, (Letter from Maj. Gen. Andrew J. Goodpaster). Quoted in Finnegan, supra note 11, at 120. When he wrote the letter, Goodpaster was serving as Assistant to the Chairman of the Joint Chiefs of Staff. After retiring from the Army following his assignment as SACEUR, Gen. Goodpaster was recalled to active duty as Superintendent of the Military Academy in 1977.
\textsuperscript{89} Finnegan, supra note 11, at 123.
\textsuperscript{90} TOFFLER, supra note 2, at 369, quoting President Herbert Hoover.
completed a tour in Korea and an Army advanced course finishing as a captain. He reflected on his advance course and earlier law of war military instruction.

[I]n the wake of Abu Ghraib and Guantanamo, the curriculum to him included insufficient instruction in just war theory and the laws of land warfare. He went so far as to write an essay for his [advance] course advocating change. “It begins with an epitaph from Tennyson’s “Charge of the Light Brigade” and ends with a call to restructure the moral-ethical education soldiers receive: “In the wake of the events at the Abu Ghraib prison, the necessity of providing our soldiers comprehensive education in the laws and ethics of land warfare has never been clearer… This instruction should aspire, not merely to teach rules and consequences, but to train officers to use ethical reasoning to arrive at a specific decision. This is vital when no set rule clearly defines right…from wrong.”

Reasonable minds may often disagree, but on this subject, consensus should be able to be reached that law affects decisions in warfare, and its teaching and inculcation are important. Especially in war, rules of conduct matter. Recounting the consequences of a paucity of such life and death information, Dr. Samet confronts the battlefield narrative from a teacher’s perspective involving another former cadet, now a battlefield veteran.

This is precisely the challenge accepted by an officer like Captain Ian Fishback, whose desperate letter to Senator John McCain was published in the Washington Post on September 28, 2005. Fishback, a West Point graduate who deployed to both Afghanistan and Iraq with the 82d Airborne Division, witnessed things that suggested to him only the murkiest understanding among some soldiers of the law of armed conflict. Dispirited by his chain of command’s unwillingness or inability to clarify the rules of engagement, Fishback attempted to figure out for himself the rules governing detainee treatment. He asked peers whom he respected, and when they had no answer, he asked senior officers…among them Dan.

91 SAMET, supra note 70, 164-165.
92 Id., 208-209. “Dan helped him to understand the rules as best he could, but Fishback remained frustrated that guidelines had not been promulgated throughout the force with sufficient clarity. He wrote to his congressman and then to Senator McCain about potential violations to the Geneva Convention. “I am certain,” he informed the latter, “that this confusion contributed to a wide range of abuses including death threats, beatings, broken bones, murder, exposure to elements, extreme forced physical exertion, hostage-taking, stripping, sleep deprivation and degrading treatment.” Correctly invoking the term tragedy to describe what had happened, Fishback recalled that at West point he had resolved “that my men would never commit a dishonorable act; that I would protect them from that type of burden. It absolutely breaks my heart that I have failed some of them in this regard.” Fishback believes in the necessary connection between a society’s values and the way in which it fights its wars. He wrote to McCain: “I
In an environment where the rules of warfare matter greatly, a lack of not only knowledge, but also understanding was pervasive. A single three-credit core law course cannot begin to address all the legal issues, like detainee treatment, an officer will contend with on the battlefield or high seas. Yet it is a start that provides cadets and midshipmen a place to begin rationally “thinking” about such important topics involving war.

VIII. CONCLUSION OF CORE WAR DEBATES IN FAVOR OF ACADEMIC PEACE FOCUSED ON PRODUCING THE “THINKING” OFFICER ARMED WITH RELEVANT, SIGNIFICANT, MATERIAL, AND COPEABILITY IN A DYNAMIC 21ST CENTURY.

STEM vs. law as core curriculum—which promises greater relevance, significance, materiality, and copeability in a fast changing global environment? STEM courses are by definition transient in nature. What is current today in science, technology, engineering, and mathematics is constantly superseded by new knowledge. While the Academy should be a college of knowledge of such subjects that produce the “thinking” officer, law is not transient. There are certainly developments in all legal fields, but as a subject it is not given to the transient change experienced by STEM courses. There are immutable legal principles that speak to generations of military leaders past and yet to come. The evidence from the battlefield and high seas presented by generals and newly minted junior officers remind us that the law of war is not transient, subject to rapid redefinition. What we hear from far away war zones is a cry for more law instruction, not less, addressing application of legal principles in new war contexts.

Academics can debate endlessly the intellectual value of their core subjects. At the end of the day, however, it is the battlefield and high seas clarion call that is heard from Abu Ghraib, Guantanamo, Somalia, Syria, Iraq, Israel, Korea, the South China Sea, Nigeria, Cameroon, Yemen, and Ukraine, that should capture the core curriculum attention. Law as distinguished from STEM curriculum speaks to those far off places in a voice that regulates behavior in the most salient of purpose and activity. Mr.

strongly urge you to do justice to your men and women in uniform. Give them clear standards of conduct that reflect the ideals they risk their lives for.”
Toffler poignantly observes in 1970 “…[I]ndeed a growing body of reputable opinion asserts that the present moment represents nothing less than the second great divide in human history, comparable in magnitude only with that first great break in historic continuity, the shift in barbarism to civilization.”

Today it might be equally asserted that there is a reversal of development from civilization to barbarism. In either case, is STEM or law of greater use in this contest of civilization over barbarism?

Looking forward, one naval officer historically observed “Experience in today's wars has proved the value of the human component in war. We have learned, often painfully, that war is not a science project.” How true. Nevertheless, the Academies are mesmerized with the “science project” that an extensive STEM core curriculum provides. “Unfortunately, the services still tend to favor a technical rather than a humanist preparation for commissioning. [All] services, to include the Navy and Air Force, should readjust the percentage of officers educated in the physical and the social sciences to favor the latter.”

Looking back on the precipice of World War II—the most barbaric war civilization has endured, a prescient Military Academy group of department heads summed up the STEM vs. law contest well.

The Academic Board has come to realize that the study of Law has special training values particularly useful to military men—the development of powers of analysis and a sense of relative values. These developed faculties furnish an officer a sound basis for his 'Estimate of the situation,' so important in a successful military career.

Were they wrong then or are they outdated now?

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93 TOFFLER, supra note 2, at 14.
94 Wright, supra note 73, at 59.
95 Id.
96 The Howitzer, Class of 1941 (1941), at 53.