14th ICCRTS

"C2 and Agility"

Agility and Appropriateness: Matching Shift to Scale

Paper ID 133

Topic 1: C2 Concepts, Theory, and Policy

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ABSTRACT

Agility is organizational shape-shifting in face of complex operating environments. Command is the guiding hand for the shape-shifting. As the DOD CCRP community has noted, agility is a multi-dimensional phenomenon that, if applied effectively, produces force multiplier effects of considerable value. However, achieving agility in command only works in very few organizations, and often not for very long. This paper describes and analyzes the characteristics of those organizations that can best apply agility in command, staff and planning.

The key descriptor of those characteristics is appropriateness, a term defining the right scale for the applicable operating environment. Appropriateness has long been associated with technologies; however, in the current and foreseeable high entropic operating environments of the United States military and interagency, the term must be extended to include doctrine and force structure. The proposed paper presents case studies of appropriateness and agility to demonstrate both the extraordinary advantages enabled by coupling these concepts, and the disastrous results of ignoring both. The paper concludes by recommending necessary coupling of the two concepts for effective command in the future.

INTRODUCTION

What kind of organization can apply agility? Can any organization apply it? Are there certain characteristics that enhance an organization's ability to be agile? These are the key questions to be addressed in this paper. First, it is essential to identify just what agility in command means. Next, the discussion moves to answering whether all, some or any organizations, focusing on those in the military, can achieve and maintain agility in command. The answer to this question leads to assessing what characteristic(s) are necessary for organizations to effectively use agility. The characteristic of note in this paper is appropriateness, succinctly defined as the situational fit of size, doctrine, training, equipment, manpower, organization, resources,

and strategy. The paper then provides case studies to illustrate four combinations of agility and appropriateness. From these are drawn the major conclusion that one size does not and cannot enhance agility in all military situations. In an era that maintains that irregular warfare, conventional warfare, and stability, security, transition and reconstruction operations are to be all held as equal in priority, this conclusion bodes ill for those who deal with developing the necessary resources to support United States national security strategy.[1]

WHAT IS AGILITY?

The dictionary refers to agility as quick and easy movement. Synonyms include nimble, dexterous, deftness and rapidity of movement. Antonyms refer to sluggish, torpid and lethargic. Curiously, in the version of Webster's New World Dictionary[2] consulted here, agility is followed by a reference to Agincourt, a battle of the Hundred Years' War in which a relatively nimble and deft English force soundly defeated a sluggish (because of terrain and weather conditions) French force. Agility could hardly find a better example for illustration.

However, the Command and Control Research Program (CCRP) of the Department of Defense (DoD) has expanded the concept of agility. David Alberts summarizes the CCRP discussion on agility calling it a "gold standard," a "theme," a

[1] The Department of Defense Directive, 3000.05, titled "Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations," dated November 28, 2005, is the cornerstone document for SSTR policy. Paragraph 4.1 establishes the co-equality of SSTR operations with combat operations as DoD policy.
[2] 1958 edition; Cleveland: The World Publishing Company.

"characteristic," and a "function" among other descriptors of new "edge" organizations, especially with respect to command and control.[3] The summary reads like an illustration of the old fable of the blind wise men trying to describe an elephant, an animal they have never seen; many aspects of the concept are identified, but not the concept itself. Atkinson and Moffat are more precise; they define agility as the variety of system behaviors available to a given system – like a military command and control organization or unit.[4] This is variety of the type very specifically described and bounded by H. Ross Ashby in his law of requisite variety, described as: "for this system to be in control, the variety of the controllers (i.e. the management system) must match the variety of the system."[5] Actually, the Atkinson and Moffatt definition is an abbreviated and specific case of Ashby's Law. More generally, the Law calls for the variety of the controller to *at least* match the variety of the system, including an accounting for entropic effects inevitably due to any system activity.[6] Thus, according Atkinson and Moffatt, if the control at least matches the variety of the system, the control can be said to be agile.

The definition of agility being system variety is sophisticated and measurable. It avoids the verbal "fog" associated with other concepts. No longer are needed the so-called seven characteristics of agility addressed in earlier CCRP publications; this would be dangerously scientifically tautological to a trivial degree in that one would have

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[3] David Alberts in the Preface to Simon Reay Atkinson and James Moffatt, The Agile Organization: From Informal Networks to Complex Effects and Agility; Washington: Command and Control Research Program, 2005, pages xix-xxi.
[4] Ibid, page 126.
[5] Ibid.
[6] See Jonathan Czarnecki, "The Failed Thermostat: The Illusion of Control in an Information Rich Age," paper presented at 13th ICCRTS, Seattle, Washington, 2008, page 8.

characteristics measuring characteristics. An infinite logic regression thus ensues and no progress or verification is possible.

AGILITY IN COMMAND

One of the key conclusions of the work of Atkinson and Moffatt is that not all organizations can be agile. Indeed, most are not. Of particular interest here are military organizations and, as Atkinson and Moffatt point out very clearly, these are some of least agile organizations of all. There are two scientific and logical reasons why this is so. First, the system variety that is measured by agility represents the total potential agility of the system; no actual system, living or otherwise, can achieve its potential fully. The reason is found in that ending element of Ashby's Law, the basis of the Atkinson and Moffat definition of agility: entropy. Every system activity or behavior engenders some dispersion of effort, some loss of energy, some loss of information. This means that no organization, unit, or command system can be perfectly agile.

Still, imperfect agility that approximates the potential can be quite acceptable if that means a system's agility is greater than a competitor's or an opponent's. One cannot allow perfection to become the enemy of the good. Unfortunately, this is where the second reason for most organization systems failing to be agile enters the argument. That reason is this: because the agility of the system is measured *within* the system, the total potential agility can never be known, or alternatively, if the total potential agility is thought to be known, it can never be verified. That reason is a logic

extension of Kurt Gödel's Incompleteness Theorems and Proofs.[7] Trying to assess or improve agility as system variety becomes a game of the dog chasing its tail.

These reasons provide an understanding why command systems rarely achieve desired agility; the systems simply cannot know what is the desired agility beforehand and, simultaneously, whether it is within the specific operating environmental system. That some command or organizational systems appear agile while others pale by comparison either is due to circumstance or some other factor(s.) Assuming that luck or fortune always plays some role in successful command systems, and cannot be understood except for the chance it represents,[8] then the analyst interested in the agility in command must identify what supplemental factors exist to explain and/or enhance the idea.

Consider for illustration purposes a highly agile organizational command system in the military. It has the ability to shift its operational variety very quickly in response to operating environmental system and opponent's system changes. Holding chance or uncertainty aside for the moment, can one argue that such a nimble system always would succeed in its missions? Perhaps so, but there remains some nagging

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[7] Gödel's theorems and proof are found in his original paper, (translated) "On Formally Undecidable Propositions of Principia Mathematica and Related Systems," published in Monatshefte fur Mathematik und Physik, Vol. 38, pages 173-198. Unless one is an experienced student of advanced mathematics, I do not recommend reading either the original in German or a translation. The most scientific popular interpretation can be found in Ernest Nagel and James R. Newman, Gödel's Proof; New York: New York University Press, 1986.

[8] All the major works on military command and strategy discuss the role of chance, mostly with the intent on minimizing or eliminating it. A few realize the futility of such effort, particularly in the extraordinarily complex realm of war. Perhaps the most famous and best of these thinkers is Carl von Clausewitz, who famously added friction (entropy) and fog (uncertainty) to our lexicon of war. Read his On War (Paret translation); Princeton, New Jersey; Princeton University Press, 1976.

possibilities for failure that the serious analyst must address: suppose the enemy is in overwhelming numbers; suppose the equipment and technology do not fit the environment (for example, think of heavy tanks in dense tropical jungle); suppose the doctrine does not exist or work (for example, think of the United States (U.S.) occupation of Iraq, 2004-2007); or, suppose the command system personnel are not trained for the situation faced (again think of Iraq). These suppositions all have a common denominator: the agile command system, for one or more reasons, can fail because it does not *fit the situation*. This "fit" or, in technology and ecology terms, "appropriateness" is the supplement or complement to agility that can ensure mission success.

WHAT IS APPROPRIATENESS

Returning to the dictionary, appropriate as an adjective refers to suitability, fitness and propriety. When one conducts an internet search using "appropriate" or "appropriateness," he/she finds references across many disciplines, from health through technology to management to semiotic systems. In all cases, the distinguishing facet of appropriateness is its proper fit to a given situation or environment. An appropriate system is one that matches (or fits) the system components with its function and its operating environment.[9] This is consistent with a classic approach to systems and planning introduced by Russell Ackoff, in which a functioning system can be understood to be appropriate when "the (system) parts fit and work together, not merely how well

[9] Ivo Janecka, "Is U.S. health care an appropriate system? A strategic perspective from systems science," Health Research Policy and Systems; Vol. 7, No. 1 (online.)

each performs when considered independently."[10] A major conclusion from this line of thinking is that the system is more than the sum of its parts.[11]

One major sub-field of study on this topic is Appropriate Technology. In this instance, the field researches and designs solutions to highly complex problems ("messes" in Ackoff's terminology) through the imposition of technologies and social changes that fit the environment. These are scalable solutions that may sub-optimize a desired technology at a less-than-state-of-the-art level but maximizing the acceptability of the technology by the affected social group. Appropriate Technology derives its name from its major proponent, an economist named E.F. Schumacher, who first identified the need for such approaches in the now classic text, Small is Beautiful: Economics as if People Mattered.[12] The title provides the direction the author takes in his argument. A second and different case of Appropriate Technology leading to Appropriate Finance is the mini-loan movement now expanding throughout developing countries. Now technology is coupled with policy (requirements for loans) and information (money) to generate needed capital for emerging business people in these poor – and undercapitalized – countries; none of the parts of this system of finance is optimized. The technology is simple and accessible to a community; the requirements probably would not pass muster for a loan in the U.S.; the actual money loaned is miniscule compared to a venture capital undertaking in the developed world. However, taken together, the resulting system *fits* the environment in which it is implemented.

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[10] Russell Ackoff, Redesigning the Future; New York: John Wily & Sons, 1973, pages 14-15.
[11] Ibid., page 13.
[12] Published in New York: Harper & Row, 1973. Read Part III, "The Third World," for the application of Appropriate Technology to problems of development.

As alluded to in the above paragraph, appropriateness or appropriate systems refers to more than just technology; it refers to all facets of the organizational system: the technology, people, tasks, doctrine, strategy, process and structure.[13] In fact, appropriateness is the organizational system characteristic that empowers organizational agility in the right place at the right time, given a specific system and environment. Appropriateness is a necessary corollary to agility. Together, these two system characteristics enable organizational shape-shifting to fit operating environmental changes. They are the essential components for describing and defining adaptability.[14]

AGILITY AND APPROPRIATENESS

One way to demonstrate both the connectedness and the distinctiveness of agility and appropriateness is to observe actual case studies that illustrate their characteristics. The first case, where the command organizational system is both agile and appropriate, is the infamous el-Qaida attack on the U.S. on September 9th, 2001.

The operational challenge for a small organization like el-Qaida was immense. Their target, the U.S., boasted the most powerful armed force in the world; its intelligence organizations, despite the popular criticism of today, also were potent – to the point of almost intercepting the attack.[15] What the attackers chose to do was

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[13] The components of an organizational system are derived from Harold J. Leavitt's Organizational Diagram, found in Leavitt and Homa Bahrami, Managerial Psychology: Managing Behavior in Organizations; Chicago: University of Chicago Press, 1989.

[14] Andresen, K., and Gronau, N.: "An Approach to Increase Adaptability in ERP Systems." in: Managing Modern Organizations with Information Technology : Proceedings of the 2005 Information Recources Management Association International Conference, 2005.

[15] Of the many books and articles on the 9-11 attack, one consensus favorite in terms of accuracy concerning both sides of the story is Lawrence Wright's The Looming Tower; New York: Alfred A. Knopf, 2006. Wright reveals just how close the FBI was to breaking up the

conduct asymmetric warfare; assault where one's enemy was weak. Where America was weak was in its internal security. That vulnerability enabled the attackers to penetrate their target, to hide in plain sight, and to obtain the agents of destruction in such a timely fashion as to paralyze the American defenses for just enough time to complete the attack. The el-Qaeda attack showed agility in the variety of places, platforms and targets. Their command structure was simple and subtle; it relied on elementary codes used during open telephone calls. The assault leader, Mohammed Atta, selected targets and times less than three weeks before the attack. Individual attackers bought their tickets, limiting the visibility of the assault.[16] Only one of four assaults, United Flight 93, failed to complete its mission.

The 9-11 attack was appropriate because it fit the situation and it fit the desires of its ultimate leader, Usama bin Laden.[17] It maximized impact while minimized cost; over $27 billion in direct damages with about 3,000 dead was exchanged for about $500,000 in operation cost and 19 dead attackers. Apparently the major weapons of destruction that enabled the attackers to take over the aircraft were knives and box cutters.[18] Indeed, one would be hard pressed to find a better example of an agile and

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attack, only to be foiled by bureaucratic rules that limited cooperation between them and the CIA.

[16] This information is from an Al-Jazeera report on the 9-11 attack, shown a year later, and also reported by CNN. Read this story at the following site: http://archives.cnn.com/2002/WORLD/meast/09/12/alqaeda.911.claim/.

[17] Wright, The Looming Tower, page 308.

[18] American economic costs comre from Robert Looney, "Economic costs to the United States Stemming from the 9-11 Attacks," in Strategic Insights, Vol 1, Issue 6 (August 2002). The costs for el Qaeda are from the National Commission on Terrorist Attacks Against the United States, The 9-11 Commission Report, Executive Summary, accessed at http://www.9-11commission.gov/report/911Report_Exec.htm.

appropriate command system, albeit one that inflicted so much pain and suffering on this nation.

At the other end of the spectrum are those command systems that lack both agility and appropriateness. The case study for this is the failed Allied assault on the German defenses at Dieppe in 1942.

Operation JUBILEE, as the Dieppe attack was named, lacked everything that the 9-11 attack had, including luck. Although later referred to as a raid, it included a reinforced Canadian infantry division, a large proportion of the Royal Air Force fighter force, and a significant naval armada. It ended with the effective combat loss of the division (over 50 percent casualties or prisoners), many fighters lost, and another Dunkirk-like retreat for the Royal Navy. There was no real objective for the attack, other than to take Dieppe, a coastal city on the French side of the English Channel. After taking the city, the attackers were then to withdraw and return to home station. The reasons why have never been fully explained.[19]

The Allied command system was divided into a triumvirate; ground, sea and air had no common leader except in name.[20] Each commander pursued his own service priorities; this in turn prevented any leverage or force multiplication from the combined forces. Additionally, the plan allowed for no alteration or change called for by the immediate situation; it was inflexible, a point strongly commented upon by the ground

[19] There were many ex post facto reasons stated for the raid, the most common of which was a rehearsal for OVERLORD, conducted two years later. However, that was never discussed prior to the attack. Read Robin Neillands, The Dieppe Raid: The Story of the Disastrous 1942 Expedition; London: Aurum, 2006, page 108.

[20] Ibid, pages 272-273.

force leader, Canadian Major General J.H. Roberts.[21] In this, his German counterpart, General Haase agreed. There was no room to maneuver on the beaches before the city, and there were too few troops landed at the flanks to turn them. Each unit had detailed orders as to what and where to go; there was no guidance on what to do if the orders turned out to be impossible. Thus, the landing force became tied up on the beaches and vulnerable to inevitable counterattack by the Germans in and about the city.[22] The outcome of the Allied assault almost was foreordained.

In short, there was virtually no variety in tempo, in place, in force maneuver, or in command for the Allies at Dieppe. The attacking forces were in an operational straightjacket and exposed as such by a far more nimble enemy. It did not hurt the German case that they also knew of the attack hours before it occurred due to a naval engagement with the assault force about three hours prior to the landing.[23] Agility on the Allied side was completely lacking.

The lack of a clear objective for the assault led to a poor sizing of the attack force. There was no appropriateness or fit to the situation. As noted above, the assault force was too big to achieve real surprise and too little to be able to sustain an assault. In fact, after initially calling the attack a raid, the Allied High Command backtracked, calling it a reconnaissance in force.[24] The Allied force did not match the plan, and the plan did not match the force. In the aftermath of the assault the Allied

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[21] Terence Robertson, Dieppe: The Shame and the Glory; Boston: Little, Brown & Co., 1962, page 405.
[22] Counterattack was a doctrinal concept at the heart of German active defense.
[23] The German Navy intercepted the assault force in the English Channel. Read Neillands, The Dieppe Raid..., pages 131-135.
[24] Robertson, Dieppe..., page 391.

leaders reckoned that there was virtually no way that *any* Allied force of similar size could have succeeded.[25] It is worth noting here that if one has trouble naming a thing, it is likely that one does not have a good idea what that thing is. That is the sad legacy of Dieppe.

The third case presented in this paper is of special interest to American force planners today for it involves the case of an agile command system placed in an inappropriate setting. The reason for this interest is that this is precisely the risk that the American military today is facing in the transformation of force, doctrine and equipment following the Iraq and Afghan wars.[26] The issue for the Americans is plain: the cost of maintaining a Cold War force capable of engaging enemies across the upper portion of the spectrum of conflict, that is conventional operations, is too high while the returns on investment in current operations, characterized by insurgencies in Iraq and Afghanistan, are too little. The desired transformation, to a more agile force, expected to be appropriate for foreseeable conflicts is a light, highly mobile and deployable force, commanded in a manner that promotes local initiative.[27] The risk also is simply stated: if the foreseeable conflict environment proves wrong (something that has occurred with disturbing regularity), and the conflict environment again moves towards the upper end of the spectrum of conflict, then the transformed force will be unable to succeed in such

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[25] Neillands, The Dieppe Raid..., page 272.

[26] Perhaps the foremost critic of the current transformation of doctrine is Lieutenant Colonel Gian Gentile, USA. A concise summary of his thinking is found at the Commentary box on the Armed Forces Journal International website, located at http://www.armedforcesjournal.com/2008/01/3207722.

[27] There are many articles and books available that address these issues. One entire on-line journal, the Small Wars Journal, discusses nothing but this transformation. One book of readings that summarizes the avocation of change is Winslow T. Wheeler (editor), America's Defense Meltdown: Pentagon Reform for President Obama and the New Congress; Washington: Center for Defense Information, 2008.

an environment. In the terms of this paper, the risk is that the force will be inappropriate to the operating environment.

The case illustrating the results of such a risk becoming reality is the British Expeditionary Force (BEF) at the start of World War I, from August to December, 1914. What happened during that period was that the highly capable and competent light force that was the BEF, designed for imperial policing and small wars, entered into a high-end conventional conflict on the continent of Europe against an expert conventional force of Germans. By the end of the period, the BEF had been destroyed as a coherent force, never to return to its pre-war position; the British replaced it with a conventional mass army fit to fight a sustained campaign against a conventional foe.[28]

The BEF going into Belgium in August, 1914 had to be an agile force with an agile command system because of its role within the British empire. That empire spanned most of the earth's time zones; thus, the force had to be dispersed. The empire was made up of colonies with large indigenous populations; thus the force had to be sufficiently robust with significant local participation in that force. Being a very large empire at a time when communications limited the direction that the center of the empire could give meant that the command system had to be able to take matters into its own hand, confident that it kept the imperial intent in mind. Finally, in addition to the mere large distance within the empire, the variety of cultures and terrain meant that the force had to be adaptive to many different operating environments. The fact

[28] An excellent technical and analytical history of the British force can be found in Nikolas Gardner, Trial by Fire: Command and the British Expeditionary Force in 1914; Westport, Connecticut: Praeger, 2003.

that for almost two hundred years that force had maintained order and contributed to the expansion of the British empire meant that overall the force was effective.[29]

The way the British army succeeded in its "small wars" worked against its success in World War I. Such wars were fought by relatively small formations of British regulars, augmented by larger indigenous units, over a large land area. While this led to tactical proficiency of units and leaders, it did nothing for high level command capabilities. In fact, field leaders often took a Nelsonian "blind eye" to the dictates of high command when they felt circumstances required it.[30] Similarly, such a force required its commanders in the field, not in school or on staff. Thus, the British force was relatively inexperienced and ignorant of operational and strategic command necessities at the outbreak of World War I.[31] The British prided themselves in their small units, the regiments, that had proven themselves in the imperial wars as well as in the Napoleonic wars. This contributed to the centrifugal relationship between subordinate (regimental) command and higher formations (without the regimental traditions.)

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[29] A readable popular history of the British Imperial Army during the bulk of this time can be found with Byron Farwell, Queen Victoria's Little Wars; New York: W.W. Norton, 1985. I write that overall the force was effective; however, there were some spectacular defeats as well, like Afghanistan in 1842, the Indian Mutiny in 1857, and Isandlwanda in 1879. In each case of defeat, though, the British rebounded successfully.

[30] One finds evidence of this convenient ignorance of high command orders in Winston S. Churchill's colorful and informative journalistic history, The Story of the Malakand Field Force: An Episode of Frontier War; Rockville, Maryland: Arc Manor, 2008.

[31] Gardner, Trail by Fire, pages 21-23. Also Martin Samuels, Command or Control? Command, Training, and Tactics in the British and German Armies, 1888-1918; London: Cass, 1995, Chapter 2. What they did learn, according to Samuels, unfortunately turned out to be counterproductive in many cases. For example, the idea of restrictive control on the battlefield and command "umpiring" spelled hesitation and lost opportunities later in the war.

The British Army, formed for battle against the Germans as the BEF, was a battle-proven force, able to shift focus quickly to rapidly emerging situations, but encumbered by an inexperienced higher command structure that acted like a small unit command and staff; the high command had a distinct tendency to micro-management, a quirk that enhanced argumentation between and among commands, and an inevitable slowness of action. The field force was highly agile, capable of producing and adapting to many varieties of opposition, terrain, and equipment. What it could not do was overcome its own leadership.

With a schizophrenic command system, both agile and slow simultaneously, the British force also suffered from a lack of appropriate doctrine and equipment to face the German attack. The British had no heavy artillery, too few machine guns, too little ammunition for the artillery it had, and too many cavalry horses at the start of the war.[32] Of course, this reflected the BEF's requirements for imperial small wars. It did not fit on the modern conventional battlefield. However, the force could and did learn, though at great cost. The BEF's expert troops, highly disciplined and trained, exacted a high price from the German attackers; nonetheless, they had to retreat out of Belgium and into France, a distance that would be regained only after four years of bloody attrition warfare.

The fourth and final case concerns the situation where a relatively non-agile military command system operates in an appropriate environment. This case is the

[32] Robin Neillands (again), <u>The Old Contemptibles: The British Expeditionary Force, 1914</u>; London: John Murray, 2004. Chapter 4 discusses the British problems with mobilization and deployment of the BEF, with special attention on pp. 95-96 to its organization and limitations.

Union Army of the Potomac under Lieutenant General (LTG) Ulysses Grant during the Wilderness Campaign in 1864. The choice may be surprising to those who are familiar with Grant's experience in that war; one could easily use his campaign at Vicksburg in 1863 to illustrate an agile and appropriate force at work. The Grant of 1863's Vicksburg is not the Grant of 1864's Wilderness. Most importantly, Grant in 1864 has a much different army than the one in 1863. At Vicksburg, he commanded the Army of Tennessee with generals that, after some time, believed in his leadership; foremost among these was William Tecumseh Sherman, who would eventually succeed Grant when the latter moved East to take over all the Union armies. The troops of Grant's western force were a victorious and experienced group; when Grant left them they had just lifted the siege at Chattanooga, including a spontaneous and successful assault against Confederate lines on Missionary Ridge. The Army of Tennessee had a definite esprit de corps. The Army of the Potomac had a record of defeat at the hands of the Confederate forces led by General Robert E. Lee, beginning with Bull Run in July, 1861. The singular exception to that record was Gettysburg in 1863, but that decisive victory did not lead to a follow-up pursuit to smash the Confederates; instead, the Union and Confederate forces took up winter fortifications along the Mine Run region of central Virginia. That slowness or lack of agility was what led President Lincoln to call for Grant to come east and hopefully perform some of his leadership magic with the Union forces. Grant did not directly command the Army of the Potomac; Lieutenant General (LTG) George Meade was its leader. Grant exerted his command of all Union forces in the field, observing and assisting Meade. Grant inherited a Union Army leadership that

had at best performed with mixed results. Some leaders were superb, like Winfield Scott Hancock; others were abominable, like Ambrose P. Burnside. All worked in a politicized military environment that had been the result of a theater of operations immediately proximate to the nation's capital. Thus, the senior leadership of the Union Army tended to fight one campaign with the Confederates while waging another with the government and the press for popular favor.[33]

Grant had built an agile force in the West, capable of adapting its face and pace despite changing foes, terrain, and maneuvers. Often, he did not even have to spell out what he wanted from his army; his subordinates knew what the intent was and pursued their actions consistent with that intent. The actions of General William T. Sherman, who served with Grant throughout the latter's command in the West, reflect this characteristic. Sherman often disagreed with Grant on the particulars of conducting a campaign while agreeing with Grant on the principle of the thing; this was the case at Chattanooga in 1863, at Atlanta in 1864, and at negotiations to end the war in 1865. Grant always supported and sometimes deferred to his subordinate's opinions.[34] This was an agile command system at work.

Grant had assumed that the Army of the Potomac could act the same way. In that regard, he was wrong. The Army of the Potomac was a competent and highly

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[33] There are hundreds of books on the Army of the Potomac. The focus here mainly is on the leadership. Hence consult Stephen R. Taafe, Commanding the Army of the Potomac; Manhattan, Kansas; University of Kansas Press, 2006. Also read Steven Woolworth's (editor) Grant's Lieutenants: From Chattanooga to Appomattox ; Manhattan, Kansas: University of Kansas Press, 2008. Of course, one can always rely on the man speaking for himself, read Ulysses S. Grant, The Personal Memoirs of Ulysses S. Grant; New York: Cosimo Classics, 2007 (most recent edition.)

[34] John F. Marzalek, "Take the Seat of Honor: William T. Sherman," in Woolworth (editor), Grant's Lieutenants..., pages 5-22.

experienced fighting force; the weakness was in its leadership. By the time Grant took command of all Union armies, the problem at the top of the Army of the Potomac had resolved itself in that LTG Meade proved a dependable if cautious commander. The problem of senior leadership was that the corps commanders and division commanders still proved uneven in quality and too politicized to concentrate on the military tasks at hand; overall, the Army was ponderous to move and slow to fight.[35] Using the language of agility, the Army's command system demonstrated a limited repertoire of variety in its maneuver and pace; it repeatedly found itself on the *outside* of the competing decision cycles with Lee's Army of Virginia. This tendency continued throughout the three major battles comprising the Wilderness campaign in the Spring, 1864. Each engagement occurred when Grant directed the Army to move on Lee's flank; each time, Lee anticipated and beat Meade to the place and punch. The result was a series of bloody, exhausting battles of attrition that wasted much of the Army of the Potomac's battle experience. What was less known at the time, except to Grant's instincts, was that Lee's Army, having less manpower than the Union to start with, also was severely struck. Both sides were exhausted from the season long campaign.

After the campaign came to a halt in front of Richmond and Petersburg, Grant realized the limitations of the Army, and, as was his trademark, adjusted his modus operandi to a siege. He also began to significantly replace the senior leaders of the Army of the Potomac with officers he believed were tuned to his way of action.[36] By the beginning of the Spring, 1865 campaign, the Army of the Potomac bore the distinct

[35] Bruce Catton, Grant Takes Command; Boston: Little, Brown & Co., 1969, pages 165-167.
[36] Catton, Grant Takes Command..., pages 409-413.

imprint of Grant army; it showed itself thus during the pursuit phase following the fall of Richmond and Petersburg, to Appomattox Court House.

Why was the Army of the Potomac command system appropriate to the situation facing it at the start of the Wilderness campaign? It was so because that Army had suffered through three campaigns of battle; almost literally, the command system had been forged in the heat of combat over and over again. The command system and the force that system employed only awaited the quality of leadership to make its power felt. When Grant took over, the mesh of sword and swordsman became complete. This author believes that in the Spring of 1865 no power among the industrialized nations of the earth had armies such as those commanded by U.S. Grant and his senior leadership.

SUMMATION AND CONCLUSIONS

This paper has looked at the issue of agility, refined its definition, and found it incomplete as an explanation for success or failure of command systems. The paper has proposed a complementary concept, appropriateness, to add power to the idea of agility. Together, the concepts appear necessary and sufficient to explain why command organizational systems work or do not work. It has presented four case studies to demonstrate the validity of this argument. More cases could be presented, however they merely duplicate the findings of the four illustrated in this paper; in researching this paper, this author found no exceptions to the typology and

agility/appropriateness matrix described here. Figure 1 below provide some examples of the variety of cases that fit into the typology:

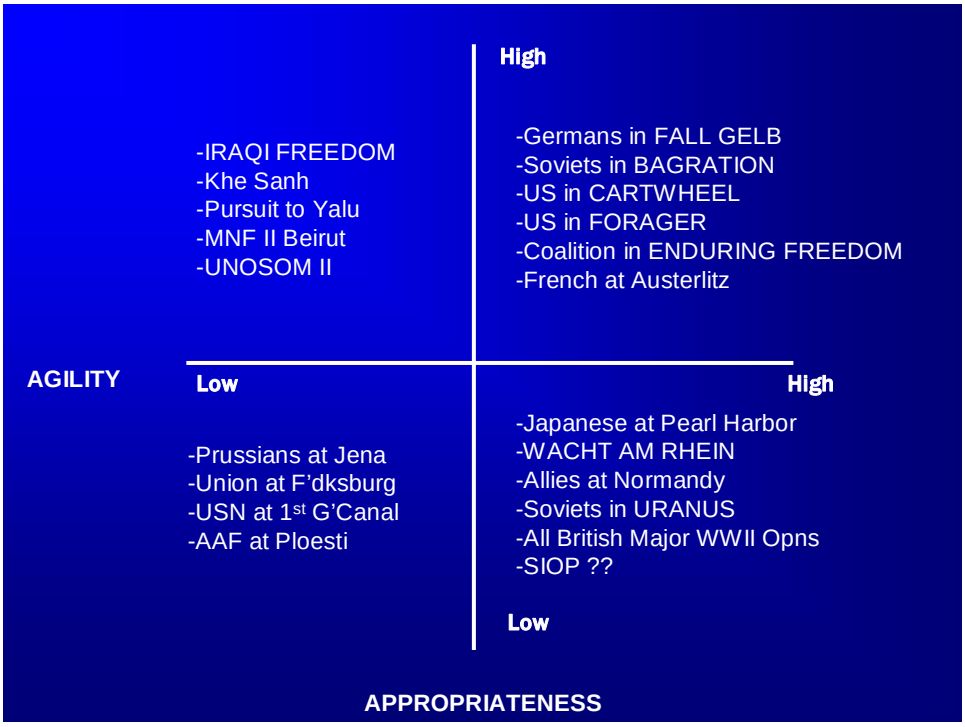

FIGURE 1

AGILITY VS. APPROPRIATENESS

The typology appears useful as an explanatory model.

There are two major lessons to take from this analysis and discussion. They may appear obvious, but the subtleties are in the details. First, it is clear that one size or solution for all circumstances, that is ignoring appropriateness, is a mistake of at least operational if not strategic proportions. The side that chooses to ignore appropriateness must be prepared to win in spite of itself and with great cost; it cannot be immune to long casualty lists. Second, if both agility and appropriateness are ignored, and the issue still won, then the concepts are more operational than strategic. Again, however, if ignoring appropriateness leads to casualties, ignoring both leads to

bloodbaths. A glance at the lower left hand quarter of Figure 1 should provide evidence of the blood and treasure that must be expended if these two concepts are not addressed prior to battle.

The U.S. military in the early 21st Century is one that must be husbanded carefully; it is an expensive force in terms of monetary and political cost. Placing that force in harm's way without consideration of these two factors risks not only the force, it risks the future of the decision-makers who deliberately ignore agility and appropriateness in the hope of a positive decision.