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14. ABSTRACT

Modern technology has conferred upon the U.S. military's strategic level commanders an unprecedented capacity to scrutinize and personally control events at the tactical level from halfway around the globe. Notwithstanding military tradition and joint service doctrine aligned with the principles of centralized direction and decentralized execution, there is a surreptitious move underway towards a more highly centralized control structure. The consequences of greater centralized control are the sacrifice of the military's speed advantage and the disruption of operational tempo for the forces in the field. A return to doctrinal command and control orientation is necessary if the U.S. military is to maintain the lead and realize the promises of defense transformation.

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FOUR-STAR TRIGGER PULLERS:
The Trend for, and Consequences of, Centralized Execution.

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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14 February 2005

Abstract

Modern technology has conferred upon the U.S. military's strategic level commanders an unprecedented capacity to scrutinize and personally control events at the tactical level from halfway around the globe. Notwithstanding military tradition and joint service doctrine aligned with the principles of centralized direction and decentralized execution, there is a surreptitious move underway towards a more highly centralized control structure. The consequences of greater centralized control are the sacrifice of the military's speed advantage and the disruption of operational tempo for the forces in the field. A return to doctrinal command and control orientation is necessary if the U.S. military is to maintain the lead and realize the promises of defense transformation.

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INTRODUCTION

The first night of Operation Enduring Freedom, the United States witnessed a near key success in the campaign against Taliban and al Qaeda forces in Afghanistan. By means of a real-time video feed supplied by an unmanned Predator reconnaissance aircraft, U.S. operatives identified a convoy of vehicles carrying Taliban leader Mullah Omar leaving the city of Kabul. But, rather than engaging with the Predator's Hellfire missiles, the aircraft was maneuvered off target so as to track the convoy from a distance until approval to fire could be obtained – tactical execution authority, the decision for "pulling the trigger," had been retained by United States Central Command (CENTCOM), at MacDill Air Force Base in Florida. A substantial delay ensued in soliciting and receiving that decision, and by the time two F/A-18 aircraft were ordered in to target and destroy the building that the convoy had ultimately moved to, Mullah Omar had escaped.[1]

What has happened to the concept that execution authority be delegated to the lowest practical level? When did U.S. military four-star commanders supplant the soldiers, sailors, and airmen in the battlespace as trigger pullers? Modern technology has conferred upon the military's strategic and operational level commanders an unprecedented ability to scrutinize and personally control events occurring all the way down to the tactical level from halfway around the globe. And, as demonstrated by the example above, it is an ability that is being put to use.

Despite tradition, training, and doctrine aligned with the principles of *centralized direction* and *decentralized execution*, there appears to be a surreptitious trend in the U.S. military's command and control orientation towards a more heavily centralized structure,

[1] Seymour Hersh, "King's Ransom," The New Yorker, Vol. 77, Issue 32 (22 Oct 2001): 35.

similar to those employed by Iraq, North Korea, and the late Soviet Union. As an illustration, contrast U.S. Air Force doctrine –

> "Execution should be decentralized within a command and control architecture that exploits the ability of strike package leaders, air battle managers, forward air controllers, and other front-line commanders to make on-scene decisions during complex, rapidly unfolding operations."[2]

– with the picture senior officials painted during the campaign in Afghanistan, in which there were repeated instances where the Air Force believed it had Taliban and al Qaeda combatants in its cross hairs, but "was unable to receive clearance to fire in time to hit them."[3]

A number of works have been published which compare the strengths and weaknesses of centralized versus decentralized control within an organization. Many conclusions point to the propensity greater centralized control has for stifling innovation at the lower levels.[4] Other authors have raised concerns regarding the survivability of a centralized control system within a military organization, indicating that the command and control system itself becomes the new center of gravity – the enemy's priority changes to be the attack of the system's transmission pathways.[5] Although these are certainly valid concerns meriting further consideration, the intent of this paper is to (a) investigate the causes for this trend towards centralized control, and, more importantly, (b) to examine the *performance-based* consequences of a military orientation of centralized control. Specifically, it is maintained that modern information technologies are serving as enablers for facilitating a natural human inclination for greater centralization of control, and

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[2] Secretary of the Air Force, Air Force Doctrine Document 1 (Washington, DC: 17 November 2003), 30.

[3] Thomas E. Ricks, "Target Approval Delays Cost Air Force Key Hits," Washington Post, 18 November 2001, A01.

[4] *See* Gregory A. Roman, The Command or Control Dilemma, Maxwell Paper No. 8 (Maxwell AFB, AL: Air War College, March 1997), 12.

[5] *See* Thomas K. Adams, "Future Warfare and the Decline of Human Decisionmaking." Parameters, Winter (2001-02): 59.

furthermore, such an organizational orientation impedes *speed of action* and disrupts the *battle-rhythm* of the fielded forces.

DOCTRINE AND TRADITION

> *Once upon a time, everybody understood what commanders did. They commanded. This was simple enough and sufficient for a thousand years or more . . . now, commanders would exercise command and control.*
>
> Gregg Todd, 1985.[6]

Joint Publication 3-0 defines command and control (C2) as "the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of a mission."[7] C2 refers not to system hardware per se, but rather to the processes of planning, directing, and controlling assigned forces. Two key principles to the successful command and control of combat forces are *centralized direction* and *decentralized execution*. Centralized direction, provided by higher commanders, assures unity of effort and synchronization of assigned forces towards a common objective. Decentralized execution, on the other hand, implies the issuing of commander's guidance, or task-oriented orders, leaving it to subordinate units at the tactical level to determine the most effective manner for executing the task. A sound C2 orientation combines the two principles, enabling the commander to continuously monitor the unfolding situation within his theater, but without directly interfering with tactical execution. In contrast, centralized control – centralized direction *and* centralized execution – allows the commander direct control of subordinate

[6] Gregg Todd, *quoted in* Roman, 1.

[7] Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0 (Washington DC: 1 February 1995), II-15.

units, thus ensuring their actions are in harmony with his intent, but reducing tactical flexibility and innovation.[8]

U.S. military history has a long tradition of decentralized control, although some might argue it was due, at least in part, to necessity, as it has been only in recent time that technology has enabled commanders to stay in persistent contact with forward units. This tradition of decentralized control has also not been without problems: Admiral Halsey's decision to pursue a weakened enemy carrier force away from Leyte Gulf in October 1944 rather than cover the Allied beachhead might have ended in tragedy had the Japanese pressed their advantage against General MacArthur's unprotected amphibious force.[9] Nevertheless, current joint and service-specific doctrine still advocates the principles of centralized direction and decentralized execution. U.S. Air Force doctrine has long called for the delegation of execution authority down to the lowest possible level in order to make certain that the decision to act was being made by those in closest proximity to the enemy.[10] U.S. Marine Corps doctrine calls for *Mission C2*, wherein commanders assign missions and explain the underlying intent, but leave subordinate units as free as possible to decide the manner of execution – broad guidance rather than detailed directions or directives are issued.[11] Similarly, both U.S. Army and U.S. Navy policy instructs the decentralization of

[8] Milan N. Vego, Operational Warfare, Naval War College Pub 1004 (Newport, RI: 2000), 187-190.

[9] In this example, the senior commander, Admiral Nimitz, provided guidance that Halsey "cover and support" the amphibious landing force. However, he also provided conflicting guidance that in the event of an opportunity to destroy a major portion of the enemy fleet, "such destruction becomes the primary task." *See* Elmer B. Potter, ed. Sea Power: A Naval History (Englewood, NJ: Prentice-Hall 1960), 777-795.

[10] Rebecca Grant, "Reach-Forward," Air Force Magazine, Vol. 85, No. 10 (October 2002): 44.

[11] Department of the Navy, Headquarters U.S. Marine Corps, Command and Control, MCDP 6 (Washington DC: 4 October 1996), 109.

decision authority to the lowest practical level.[12] In view of the military's doctrinal stance, how is it that the practice of decentralized execution appears to be waning?

CENTRALIZED EXECUTION TAKES HOLD

The history of war has undoubtedly has its record dotted with occurrences of "strategic micromanagers," but in placing the origin of a trend for greater centralized control, there are many who point to the latter half of the 20th century, when the United States entered an epoch of limited war and, consequently, increased political oversight for military operations.[13] The existence of centralized decision making overtly bordering on centralized execution was clearly evident during the Vietnam War, when political leaders, fearful of war escalation, insisted on approving, and in many cases, selecting, targets in North Vietnam. Still though, execution authority remained for quite some time – through the first Gulf War – essentially at the tactical level.

During Operation Allied Force in 1999, the fear of escalation present during the Vietnam War was replaced by a fear of coalition fracture; of primary concern was the limiting of collateral damage, mitigated through a NATO-driven target approval process that was both arduous and exceptionally time-consuming.[14] Although increased political oversight had by now been around for quite some time, the campaign in Kosovo introduced several new factors that were to allow such oversight to have a direct impact upon execution at the tactical level. Tremendous improvements in information technologies enabled a new level of connectivity both within and external to the battlespace, and the incumbent

[12] Department of the Army, Operations, FM 100-5 (Washington, DC: 14 June 1993), 2-6. *Also*, Department of the Navy, Naval Warfare, NDP 1 (Washington, DC: 28 March 1994), 40.

[13] David W. Roberts and Joseph A. Smith, "Realizing the Promise of Network-Centric Warfare," Military Technology, Vol. 27 Issue 7 (July 2003): 10-11.

[14] Ibid. *Also*, Grant, 45.

combatant commander was prepared to put these technologies to use for directly managing component level aspects of the campaign: "[Army Gen. Wesley] Clark elected not only to shoulder his diplomatic burdens as NATO's supreme commander, but also to conduct the air war himself from Brussels."[15] A second factor at work was the central role time-sensitive targeting – the tracking and engaging of mobile military targets – played during the campaign. By means of the explosion in battlespace connectivity, and due to the ungainly target-approval process, Rules of Engagement were set in place that required pilots to call back to the Air Operations Center for permission to strike selected time-sensitive targets and prior to engaging any pop-up targets they had just spotted.[16] Although execution authority remained predominantly at the component level, this new degree of tight tactical control frustrated pilots and, according to several, resulted in undue delays and missed opportunities.[17]

The trend for tighter tactical-level control continued following Kosovo, until, during Operation Enduring Freedom, tactical execution authority was ultimately promoted to the strategic level. A hereto unheard of throughput capacity for communications, live video feeds, and multi-sensor ISR data enabled General Tommy Franks, Commander U.S. Central Command, to watch events on the battlefield unfold in real-time from his headquarters in Tampa, Florida. This in turn allowed for issued guidance that Defense Secretary Donald Rumsfeld personally authorize any strikes on pop-up targets involving senior Taliban and Al Qaeda leaders.[18] The lengthy approval process for tactical execution – from the tactical unit, to Florida, to Washington... then back again – disrupted the battle rhythm in Afghanistan and

[15] Benjamin S. Lambeth, NATO's Air War for Kosovo (Santa Monica, CA: Rand 2001), 193.
[16] Grant, 45.
[17] Ibid, 45-46.
[18] Ibid, 46.

resulted in missed targets: military officials claimed they knew they "...had some of the big boys. The process is so slow that by the time we got the clearances [to fire], and everybody had put in their two cents, we called it off."[19] From his headquarters back in Tampa, General Franks later admitted, "it may well be true we watched a convoy for three-and-a-half hours before it was struck."[20] Centralized execution, and the precedent for the "four-star trigger puller," was by now well established.

INCENTIVES FOR CENTRALIZED EXECUTION

As it was maintained earlier, and notwithstanding the military services' doctrinal orientation, today's information technologies are serving as the enabler for facilitating an innate human tendency for greater centralized control. Despite defense transformation conventions that predict networked units – naturally self-synchronizing resources and efforts in the execution of the commander's guidance – will reduce the need for a centralized C2 process, just the opposite in fact is occurring.[21] This movement underway towards greater centralized control may be seen to originate from the military's persistent difficulty in coping with uncertainty on the battlefield – Clausewitz's *fog of war*.

[19] Ricks, AO1.
[20] Grant, 46.
[21] *See* M. P. Fewell and Mark G. Hazen, Network-Centric Warfare–Its Nature and Modelling [sic] (Edinburgh, South Australia, AUS: DSTO Systems Sciences Laboratory 2003), 29.

Revisiting Uncertainty

> *...there are things we know we know. We also know there are known unknowns... But, there are also unknown unknowns – the ones we don't know we don't know.*
>
> Defense Secretary Donald Rumsfeld, 2002.[22]

The defining problem for the military is the need to deal with uncertainty. Were it not for uncertainty, C2 would be relegated to the relatively simple process of managing resources; planning and direction would dominate, and there would be little incentive for direct control. And yet, war is the province of uncertainty: "three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty."[23] Quite contrary to promises that modern technology might bring about an essentially transparent battlespace for the conflicts of tomorrow, in effect "lifting the fog of war," it is in fact much more probable that, despite the exponential growth in information technologies, there will continue to remain residual uncertainty in the future battlespace.[24] Until technology provides us the capacity to discern the mind of the adversary, the capacity to *know* enemy intent, uncertainty will continue to be a forcing function for the conduct of war. For although technology has assuredly improved the capability for massing knowledge, it also serves to illuminate the larger landscape of the unknown – it moves forms from the realm of "unknown unknowns" to that of the "known unknowns".

Within the battlespace, residual uncertainty may breed two kinds of responses. On one hand, the decision maker may accept uncertainty, either acknowledging it as risk or

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[22] Defense Secretary Donald Rumsfeld, at a news briefing in February 2002. *See* <http://www.cnn.com/2003/WORLD/europe/12/01/rumsfeld.english.reut/> [04 February 2005].

[23] Carl Von Clausewitz, On War, ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press 1976), 101.

[24] *See* William A. Owens and Edward Offley, Lifting the Fog of War (Baltimore, MD: John Hopkins University Press 2000), 15-16.

ignoring it altogether. On the other hand, it may block action in that the decision maker is unable to resolve the uncertainty and select a course of action. In this case, a demand for more information is introduced in an attempt to reduce ambiguity to a level at which the decision maker is able to commit to action. The influence of uncertainty permeates all the levels of war to a greater or lesser extent; however, as it will be later demonstrated, it imposes a far greater impact to military performance when tactical control is assumed at the operational or strategic level.

The Human Dimension

Uncertainty alone is not sufficient to cause incentive for centralized control. There also exists a fundamental human tendency, as described above, to counteract uncertainty through the massing of information. If, as it has been elsewhere shown, "the choice between centralized and decentralized control involves the distribution of uncertainty,"[25] then commanders will naturally gravitate towards centralized control in their quest to reduce uncertainty at the top of the hierarchy. This has the negative consequence of redistributing uncertainty to the bottom of the organization (the tactical level in a military organization), further propelling the movement towards centralized control: the price for greater certainty at the top is less autonomy for tactical units in the field.[26]

The dialectic of uncertainty and the human response are not new phenomena within the arena of war. What is new, however, is the level of battlespace connectivity that can be achieved through today's information technologies. Operational and strategic level

[25] Roman, 10.
[26] Ibid.

commanders, lured by the desire to reduce uncertainty at their level, are using this technology to plug into the battlespace and assume control at the tactical level.[27]

HERE BE DRAGONS

Many of the weaknesses associated with an organizational orientation of centralized C2 have already been briefly mentioned (fettered innovation, reduced autonomy, increased vulnerability in the case of a military organization, etc.). If such an orientation provided for improved military force performance – measured here using two Department of Defense metrics for force transformation: *speed of command* and *flexibility in execution*[28] – then perhaps these consequences would be acceptable tradeoffs. Regrettably, this is not the case.

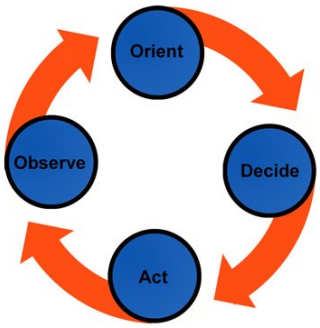

Figure 1
OODA Loop

An effective means of analyzing performance vis-à-vis speed of command is through the OODA Loop model. OODA is an acronym for Observe, Orient, Decide, and Act, which describes the basic sequence of the C2 process, and which may be applied to any cognitive interaction problem. Here the term *speed of action*, defined as one full cycle of the OODA Loop (refer to figure 1), will be used in lieu of speed of command as a qualitative indicator of how fast a fielded unit can respond to an unfolding situation within the battlespace. Through this frame of reference, it may be demonstrated that centralized execution processes reduce speed of action, and consequently, disrupt battle-rhythm and inhibit flexibility in execution.

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[27] It is acknowledged that today's 24hr media cycle is also a significant factor in furthering the incentive for centralized control. The impacts of the "CNN effect" and the "strategic corporal" are well developed by Bernd Horn *in* "Complexity Squared," Canadian Military Journal, Vol. 4, No. 3 <http://www.journal.forces.gc.ca/engraph/vol4/no3/command_e.asp> [18 December 2004].

[28] Office of the Secretary of Defense, Military Transformation: A Strategic Approach (Washington, DC: Fall 2003), 3.

The OODA Loop Slows Down

There are at least two mechanisms through which a process of centralized execution works to slow the OODA Loop, and therefore, speed of action. The first is the synthesis of uncertainty and data fidelity. In a centralized C2 architecture, the decision maker is, by design, geo-spatially removed from the act; the observation process in the OODA Loop is occurring over space, and the sensory inputs available to the decision maker are, consequently, limited by the precision of the sensor, the throughput of the transmit pathway, and the fidelity of the receiver (see figure 2). As a result, data received by the decision maker during observation are filtered, failing to precisely replicate the battlespace environment. During the Kosovo campaign, pilots rightly questioned whether the commanders fully perceived the current tactical situation: "just one step removed, the battle rhythm seemed different."[29]

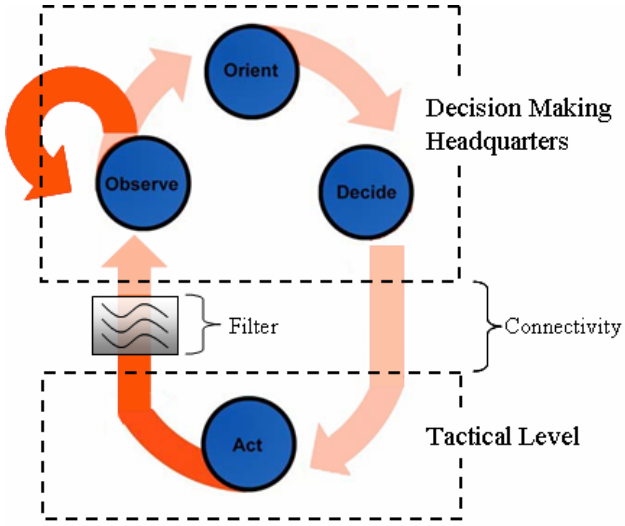

Figure 2
OODA Slow Down in Centralized Control Structure

The resultant mismatch biases the system to seek further data, as described earlier, in order to reduce the gap between perception and reality, and consequently tends to warp the observation process in the OODA Loop back onto itself, as indicated in figure 2. An example of this mechanism at work was observed during the Afghan campaign, where, according to officials within CENTCOM, a strike against a target identified through real-time

[29] Grant, 46.

video feed was overridden by higher headquarters at Tampa because they desired a second data source for independent verification.[30]

This mechanism may also be seen at work during cases of conflicting interpretations of received data. Because of today's tremendous improvements in battlespace connectivity, commanders are less likely to question, "what information do we have?", and more apt to ask "what does this information mean?". Inconsistent analyses are assured to occur, particularly given that data gathering capacity currently outstrips analytic capability.[31] When confronted with a plurality of reasonable analyses, the only alternative to collecting more data for resolving the ambiguity is to ignore all but one of the possibilities, a proposition few commanders are willing to take. At one point during the Afghan campaign, authority to strike a Taliban military convoy, moving into a blocking position against Northern Alliance forces, was withheld by CENTCOM due to conflicting estimates of the situation: although most felt the convoy was a prime target, there was a dissenting opinion that it "might be a trick."[32]

A second mechanism that works to slow speed of action for a centralized C2 process involves the human decision making process itself. From a cognitive perspective, decisions are classified as either *analytical* or *recognition-primed* (for purposes here, the cognitive decision process may be thought of as consisting of both the orienting and decide phases in the OODA Loop).[33] The analytical form is the decision making process the military is most familiar with; it is a process heavy in cognitive resource demand that develops and evaluates

[30] Ricks, AO1.
[31] Michael Schrage, Perfect Information and Perverse Incentives: Costs and Consequences of Transformation and Transparency, Security Studies Program, Working Paper WP03-1 (Massachusetts Institute of Technology, May 2003), 6.
[32] Ricks, AO1.
[33] Fewell and Hazen, 20. *See also*, Gary Klein, Intuition at Work (New York: Currency Doubleday 2003).

alternatives, and then selects a best option. Because of the process' methodical and iterative nature, analytical decision making is best suited to complicated problems, and situations characterized by extensive rule sets. Analytical decision making also tends to be slow.

The second decision type, recognition-primed, is an experience-based decision making process wherein patterns in received stimuli are matched to a previous situation in order to recall the proper response. This process is much more rapid and places significantly less demand on cognitive resources than that of the analytical decision making process, but relies on expertise and an experience base that reasonably correlates with the situation at hand. Despite the military's familiarity with the analytical process, and its proliferation throughout doctrine, it is estimated that over 90-percent of tactical level decisions are recognition-primed.[34] Whereas analytical decision making is well-suited to the operational and strategic level, the complexity, and often chaos, of the tactical battlespace necessitates a recognition-primed process in order to achieve greater speed of action – at the tactical level, one does not calculate a decision, one rather arrives at one.[35]

Recalling that, through the first mechanism discussed, information received by the decision maker is fettered by the data pathways, it is difficult to think that a C2 orientation of centralized control would preserve the capacity for recognition-primed decision making. Those congruent stimuli – sight, sound, smell, proprioceptive cues, the "feel" of the battlespace – that serve the pattern-matching function for recognition-primed decisions either wane, or are completely lost, during transit to the decision maker. In a centralized control structure, speed of action will consequently be limited to the slower analytical decision process. Although it is difficult to isolate clear examples of this mechanism at work, there

[34] Fewell and Hazen, 20.

[35] Thomas A. Stewart, "How to Think with Your Gut," Business 2.0, 7 November 2002, <http://www.matr.net/article-4811.htm> [21 December 2004].

were certainly documented cases in which, despite adequate information, higher headquarters was significantly slower in their decision processes than were the tactical units in the field. During Enduring Freedom, many missed opportunities for striking high-value, time-critical targets were attributed not to a deficiency in the tactical picture at headquarters, but rather to "the length of the decision loop."[36]

THE WAY AHEAD

It would appear that the straightforward solution to the problems associated with centralized control is to point to the military's doctrinal position; an acknowledgment that the military must, in effect, "walk the walk" that its doctrine calls for. Regrettably, it might not be so easy. There are some who reproach the existing doctrinal C2 orientation as antiquated, unable to leverage the technological benefits of the "Revolution in Military Affairs": "only a centralized C2 system has the potential to deconflict these factors in the chaos of war... Decentralized execution, effective in past wars, won't answer this challenge."[37] The advocates for greater centralization, however, have yet to provide reasonable answers for many unsettled questions regarding such a move. First, greater centralization appears to be diametrically opposed to many of the capabilities sought through defense transformation; centralized execution precludes much of the shared real-time awareness and tactical innovation that transformational efforts are directed towards. Furthermore, Network-centric Warfare's self-synchronizing feature is inherently a bottom-up process rather than top-

[36] Bernard Rostker, "Transformation and the Unfinished Business of Jointness," in The U.S. Army and the New National Security Strategy, ed. Lynn E. Davis and Jeremy Shapiro (Santa Monica, CA: Rand, 2003), 145. *See also* Grant, 46-47.

[37] Jeffery R. Barnett, Future War (Maxwell AFB, AL: Air University Press, January 1996), 33.

down.[38] Secondly, there remain unanswered concerns regarding human cognitive limitations and information overload within a centralized C2 system. It is apparent that, given the explosion in battlespace connectivity and the capacity for massing information, the limiting factor in the process soon will be, or perhaps already is, the human decision maker. Consequently, in order to maintain a speed of command advantage, the commander must in fact *decentralize* decision authority, or otherwise be eliminated from the process altogether. Far from the realm of science fiction, advocates for greater centralization have little recourse to employing evermore-sophisticated "artificial intelligence" and relegating the human role to that of passive monitor. Perhaps the most compelling argument against such a course of action may be taken from the following:

> "...wars are a human phenomenon, arising from human needs for human purposes. This makes intimate human participation at some level critical, or the entire exercise becomes pointless."[39]

No, it is clear that, until leaders are ready to relinquish the decision making reigns to automation, the military's doctrinal adherence to centralized direction and decentralized execution is in fact the correct solution. But, in resurrecting the practice of decentralized execution, higher commanders will need to come to terms with some degree of uncertainty at their level so that speed of action, tactical innovation, and operational tempo can be maintained at the pointy end of the spear. *Trust* will need to retain its rightful place in the command hierarchy, pushing out the more frequently substituted *verification*. By arming subordinate units with commander's intent and intelligently crafted Rules of Engagement, strategic and operational leaders can maintain unity of effort without adversely affecting tactical performance. If, within the scope of mission objectives and political constraints,

[38] Arthur K. Cebrowski and John J. Garstka, "Network-Centric Warfare," Proceedings, (January 1998): 32. Network-Centric Warfare is a central part of DoD's transformation strategy; *See* Military Transformation.

[39] Adams, 63.

satisfactory ROE cannot be developed beforehand, during purposeful planning, what is to lead one to believe it might be accomplished real-time, on-the-fly? Ad-hoc execution is as appealing a strategy as one based on hope. If political considerations are of such significant importance that no level of uncertainty, no level of risk, is tolerable, then perhaps the application of military power is not the correct approach for the situation at hand.

Finally, there is the position "if it isn't broken, don't fix it". Many will point to the recent string of over-whelming military successes and question the need for a rudder steer. When the veneer is lifted however, it may be seen that not all went smoothly, as evidenced by several of the earlier examples provided during the Kosovo and Afghan campaigns. Missed opportunities to strike high-value targets may not have been showstoppers for Allied Force or Enduring Freedom, but against a more sophisticated threat, the consequences of reduced speed of action and a disrupted battle rhythm will inevitably take its toll.

CONCLUSION

Decentralized execution, in theory and in practice, is not incompatible with either technology or basic human nature. There is friction, to be sure. But to overcome such friction requires only discipline and the understanding that uncertainty and risk will ever be part of the decision to use military force – ideas the U.S. military is thoroughly familiar with. If the decision is made to use force, it is in senior leaders' best interests that the manner with which that force is employed is consistent with assuring maximum advantage for speed, flexibility, and innovation.

The current trend towards greater centralized control is far from inevitable, nor is it consistent across the whole of military operations. In contrast to earlier examples, there was

the following case during Enduring Freedom where decentralized control was showcased, demonstrating what is possible:

> Noting some flashing lights in the mountains below his aircraft, an Air Force pilot en route from Uzbekistan radioed his observation to the "webmaster" – a U.S. Special Forces operative managing the flow of tactical information in the field – for follow on investigation. The information was immediately forwarded over secure channels to a Special Forces unit in the vicinity, which subsequently correlated the flashing lights with a Taliban convoy. The unit connected with a nearby Navy strike aircraft, and within minutes, the front and rear of the convoy was destroyed, sealing off enemy escape. Shortly thereafter, a gunship arrived on the scene and destroyed the remainder of the convoy. In this case, tactical units in the field "collected data, shared that data, made decisions, and ordered strikes."[40]

Over a half century ago, General Douglas Macarthur provided valuable insight into the issue at hand today. In response to a reporter who wanted to know why the General didn't know exactly where the bombs were falling, the General replied: "Of course, I know where they are falling. They are falling in the right place. Go Ask George Kenney where it is."[41] The bombs were in fact falling in the right place.

[40] David Talbot, "How Technology Failed in Iraq," Technology Review, Vol. 107, Issue 9 (November 2004): 42.

[41] George C. Kenney, General Kenney Reports (Washington, DC: Office of Air Force History, United States Air Force 1987), 184.

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