Virtual Mind Control: Nonviolence as the Pinnacle of Excellence for Information-Age Conflict

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In general, the method for employing the military is this: Preserving the [enemy's] state capital is best, destroying their state capital second-best. Preserving their army is best, destroying their army second-best... For this reason attaining one hundred victories in one hundred battles is not the pinnacle of excellence. Subjugating the enemy's army without fighting is the true pinnacle of excellence.

Thus the highest realization of warfare is to attack the enemy's plans…
--Sun-tzu

There is no more precious asset for a general than a knowledge of his opponent's guiding principles and character… In the same way the commander must train his eye upon the weak spots in his opponent's defense, not in his body but in his mind.
--Polybius

There is required for the composition of a great commander…an element of legerdemain, an original and sinister touch which leaves the enemy puzzled as well as beaten.
--Winston Churchill

Introduction

The idea of winning without fighting is not new. To convince one's opponent to lay down his weapons without the recourse to force is seen as a special kind of victory, a victory born not of physical power but of mental power, an almost mystical ability to reach into an opponent's head and alter his thoughts, the ability virtually to control his mind and manipulate his will.

The idea has not been lost on contemporary American strategists. In the post-Vietnam period, a growing number within the U.S. defense establishment have argued that the fundamental nature of warfare is changing and, as a result, have proposed

changes to the U.S. military of one form or another. Common to these proposals is an increased emphasis on the nonphysical forms of conflict which betrays the Western tradition of seeking victory through the direct clash of arms in decisive battle. As such, information and decision-making play an increasingly important role in U.S. military strategy, with the greatest revolution in U.S. military affairs taking place in the areas of command, control, communications, computers (C4); intelligence, surveillance, reconnaissance (ISR); and precision guided munitions (PGMs). In the area of C4ISR, the U.S. seeks to achieve "information dominance," the ultimate goal of which is to allow it to alter the enemy's perceptions, decisions, and will to resist. In the use of PGMs, it seeks to realize its goals by expending minimal effort and incurring minimal destruction.

This paper outlines the arguments that U.S. strategists have made in an attempt to articulate a strategy of (what I call) virtual mind control (VMC). First, it places VMC in the context of the Western tradition of warfare. Second, it argues that VMC is pursued on two levels, the tactical and the strategic. Third, it argues that the quest for VMC, combined with increasing reliance on PGMs and effects-based operations, leads to force becoming a display meant more for psychological rather than physical effect. Finally, the paper ends by highlighting some objections that have been raised to a reliance on an information-based strategy of VMC.

Western Military Tradition

It is commonly held among military historians that there are important overarching differences between the Eastern and Western military traditions. Most often represented by Sun-tzu's classic, *The Art of War*, the Eastern tradition is said to place more value on maneuver and deception, while the Western tradition is said to place more

value on the direct clash of arms in decisive battle. Illustrating the longevity and entrenchment of the West's military traditions, Hanson (1989) traces what he calls "the Western way of war" to Greece in the classical period. He has argued that "The Greeks' stark way of battle left us with what is now a burdensome legacy in the West: a presumption that battle under any guise other than a no-nonsense, head-to-head confrontation between sober enemies is or should be unpalatable." He continues, "It is taken for granted in our culture…that the only way to defeat an enemy is to find and engage him in order to end the entire business as quickly and directly as possible; and so they have entered upon that crowning absurdity of warfare, the pitched battle." The Western desire for pitched battle also includes a "*desire* to deliver heavy blows and then steadfastly to endure, without retreat, any counterresponse," as well as a "desire for a single, magnificent collision of infantry." In these "desires" we see the roots of attrition warfare, the doctrine of overwhelming force, and the search for the decisive battle.

Latimer (2001) argues that deception, while it has played an important part in Western warfare, "is often seen as immoral," or as a tool of the weak. Hanson (1989) concurs when he notes the West's historical "distaste for what we call the terrorist, guerrilla, or irregular who chooses to wage war differently." "Differently" in this case usually involves "uncanny success at ambush and evasion of direct assault: they seek not to engage in *but rather to avoid infantry battle.*" Thus, our modern notion of a "fair fight" has its origins in the Greek way or warfare—Hanson reports that Alexander the Great, when urged to attack the Persians at night, rejected the idea as a policy of "bandits and thieves, the only purpose of which is deception."

The United States has not been an exceptional case; American military thinking has fit well within the Western tradition. It is often said that Americans should be adept at fighting guerrillas and terrorists because, after all, the Americans fought as guerrillas in the Revolutionary War. However, Weigley (1986) has pointed out that there has been a "tendency to exaggerate the impact of the forest warfare of the Indians upon the soldiers" of the American Revolution. Instead, he argues that "American ways of war were offshoots of European ways of war, and American strategic thought was therefore a branch of European strategic though." It was, he argues, George Washington who was the chief advocate for adopting European modes of war. Far from being a revolutionary or guerrilla leader, as some have argued, "Washington eschewed the way of the guerrilla" and thus "conducted the Revolution as a conventional war, in terms of both tactics and adherence to the international law of war."

The tradition continued into the twentieth century. Latimer (2001) explains that "for a long time deception did indeed run counter to the American concept of military honour. There was a strange reluctance among some Americans during the twentieth century to accept it as part of modern warfare." This reluctance would extend to U.S. involvement in World War II, as well as Vietnam. Americans have instead sought the direct clash of arms in decisive battle that is their Western heritage. Hanson (1989) writes, "American thinkers have given more importance to the immediate application of power against the enemy than to the arts of maneuver and envelopment." He argues that, in Vietnam, the U.S. "failure to lure the North Vietnamese army into a Western-style shootout is what finally paralyzed the huge land army of the United States and forced it to abandon the entire theater."

The Mind at War

The United States' shocking defeat in Vietnam led many within the defense community to question U.S. strategy. While that debate manifested itself publicly as a debate over the proper relationship between technology and strategy, over military budgets and acquisition programs, at a deeper level it was a debate over the merits of the Western way of war and the United States' employment of it. Thus, in the last thirty years it has become common within the U.S. defense community to hear the argument that "We have put ourselves out of business, so to speak: for any potential adversary has now discovered the futility of an open, deliberate struggle on a Western-style battlefield against the firepower and discipline of a Western infantry" (Hanson 1989). In addition to its ineffectiveness against guerrillas, insurgents, and terrorists in the twentieth century, Barnett (2004) argues that "globalization, with an assist from the spectre of nuclear weapons, has effectively killed the idea of great-power war—all-out conventional (nonnuclear) war among the world's most powerful states that concludes only when one side is completely defeated." As such, in the post-Vietnam period there has been increasing emphasis on the nonphysical aspects of conflict, especially command and control, information-gathering of all types, and deception. Where force has been used, it has grown ever more precise, with increasing attention paid to its nonphysical rather than physical effects—both "shock" and "awe" are states of mind.

The U.S. defense community has been influenced to a great degree by the ideas of the late USAF Colonel John Boyd.[i] A fighter pilot, engineer, and self-taught military

theorist, Boyd was the intellectual core of the Military Reform Movement, which spanned a period roughly from 1976 to 1986. A critic of American strategy, he advocated the adoption of maneuver warfare principles and more attention to the nonphysical aspects of conflict. His thinking resulted in the development of a decision-cycle model that is widely used within the U.S. military to this day: the OODA loop, or observation-orientation-decision-action loop.

In its final formulation, Boyd's theory looks like a schematic of a cybernetic feedback system. In the process of interacting with their environments, humans construct mental models of that environment that are shaped by immediate observation as well as orientation (based on previous experience, culture, history, genetics, etc.). The mental model is then used to decide on/carry out a course of action. The results of the action feed back into the system through observation. Yet, there is always a necessary tension between the mental model and reality, a problem of representation. Thus, the process, according to Boyd, is always one of "destruction and creation," destroying old models and creating new ones in a never-ending process. The goal of this behavior is to be flexible enough to adapt to an ever-changing environment so as to promote individual survival by increasing the individual's capacity for independent action.

Boyd admits that we both shape and are shaped by our environment. More importantly, he admits that orientation (pre-understanding) shapes our perceptions of what we think we are seeing. Thus, as time passes, he argues that there will always develop a mismatch between our mental models and reality. If we become internally focused, sticking to out-dated orientations, then a breakdown occurs in our understanding, leading to disorder, chaos, confusion, and panic.

In applying these ideas to command and control, Boyd emphasizes the importance of shared orientation, what is commonly referred to these days as "shared awareness." This shared orientation, according to Boyd, fosters the growth of implicit bonds of trust between soldier and commander which allow for command-by-intent rather than command-by-direction. He emphasizes themes such as commonality, connectedness, harmony, and holism, where the military force is seen as a "collective entity," an "organic whole," a "system." This allows one to "Operate inside [an] adversary's [OODA] loop to enmesh [the] adversary in a world of uncertainty, doubt, mistrust, confusion, disorder, fear, panic, chaos…and/or fold [the] adversary back inside himself so that he cannot cope with events/efforts as they unfold" (Boyd 1987). The ultimate goal is rapid adaptability for the U.S. military and a failure to adapt for the adversary. By causing the adversary to be internally focused, the mismatch between his mental model and reality grows over time. He becomes utterly confused and disoriented. In Boyd's thinking, this has an effect on time. Reaction time for the U.S. military becomes compressed, while reaction time for the adversary is stretched. Conversely, observed time becomes stretched for the U.S. and compressed for the adversary. The ultimate goal is to control the perceptions and decision-making of an adversary.

Originally formulated purely within the context of air-to-air combat strategies, Boyd's ideas have migrated upwards, being applied to ever higher levels of conflict. The application of OODA loop thinking could be seen at the operational level in Operation Iraqi Freedom. Murray and Scales (2003) write that, whereas the 1991 Gulf War relied on overwhelming force in the form of mass, the Iraq war of 2003 focused on "'overmatching power'—attacking the enemy across such a broad spectrum of

capabilities that his military would suffer systemic collapse." They describe the elements of "overmatching power" in terms associated with Boyd's OODA loop. The U.S. advantage in shared situational awareness over the Iraqis, combined with the "simultaneity, speed, and unpredictability" of the U.S. attack, gave the U.S. the ability to react to Iraqi threats while at the same time actively denying that same capability to the Iraqis. As such, they contend that adaptation to the unexpected and continuous improvisation were critical elements of the U.S. strategy.

Yet, at both the tactical and operation levels, the ability to influence an adversary's perceptions and decisions have so-far served mainly as an aid to the application of force, allowing the U.S. to apply force more precisely and effectively, while denying that same capability to the adversary. But the ultimate goal is to influence an adversary at the strategic level, to win without fighting. That is where VMC comes in.

Virtual Mind Control is based on the tenet that to influence the will of one's opponent is the basic goal of conflict and that, therefore, all means capable of influencing the will, including inducement, cooptation, coercion, deterrence, and even force should be employed. Szafranski's (1997) notion of "neocortical warfare" expresses an important aspect of the drive towards VMC;

> Neocortical warfare is warfare that strives to control or shape the behavior of enemy organisms, but without destroying the organisms. It does this by influencing, even to the point of regulating, the consciousness, perceptions and will of the adversary's leadership: the enemy's neocortical system. In simple ways, neocortical warfare attempts to penetrate adversaries' recurring and simultaneous cycles of 'observation, orientation, decision and action'.

Szafranski explains that neocortical warfare has several characteristics. "First, it recognizes that competition, conflict and conflict resolutions are permanent features of

the human condition… [N]eocortical warfare rejects the notion that warfare is an aberration." "Second, a theory would accept that adversaries will wage—are waging even as you read this—neocortical warfare against us." Thus, he concludes that "we should devote the weight of effort and more resources to the deliberate and continual pursuit of nonviolent influence over the adversary. The object is to understand the enemy well enough to condition or determine the choices the adversary makes."

Boyd biographer and military theorist, Grant T. Hammond (1994), agrees with this position and argues that "This means that intelligence, deception, diplomacy, and other measures assume a much higher priority. Knowing an adversary's culture, religion, and perceptions is as important as training, organizing, and equipping forces." In his view, this is the case because "Causes, allegiances, and affinities are major determinants of human action. Values are the motivation for initiating, sustaining, or rallying men and women to make extraordinary sacrifices for their beliefs." He therefore concludes that "The game is chess, not checkers: it involves maneuver, positioning, timing, and consequences several moves ahead. One wins by convincing an adversary to concede, not by destroying him through taking his pieces from the board."

When force is to be used, Szafranski (1997) argues that "lean, fast-reacting, violent, almost 'limbic' forces—the stiletto held in readiness to coerce with force of arms—must be created or preserved." As such, physical force is used in a precise manner to achieve nonphysical effects. Thus, "shock and awe" in Operation Iraqi Freedom saw the dropping of many precision weapons on buildings that the U.S. knew to be abandoned from the beginning of the war. It was, nevertheless, hoped that the psychological impacts of the violent display would lead to the intended effects, the

collapse of the enemy's system. In terms of airpower, "complexity-based targeting" has been offered as a means to achieving the goals of such effects-based operations. This targeting method is based on seeing the enemy as a complex adaptive system. One group of airpower theorists writes,

> Whereas industrial-age Newtonian analysis focuses on classifying targets according to their physical nature, complexity theory allows targeteers to focus on how targets interrelate, particularly in nonphysical ways. Complexity-based targeting emphasizes and exploits the characteristics of complex adaptive systems…By focusing on complex system characteristics, planners can induce cascading, chaotic behavior that achieves campaign objectives more dramatically and effectively (Freniere, Dickmann, and Cares 2003).

The goal is greater efficiency in targeting defined by the ability to achieve desired effects with less input (i.e. fewer bombs, greater precision, less emphasis on physical destruction).

Of course, to understand the values and the will of a potential adversary, one must first have the capability to "see" them. To influence them, one must have the capability to respond. This is where the Army's Information Dominance Center (IDC) at its Information and Security Command (INSCOM) comes in. Heath and Woodcock (1999) explain that in Information Operations (IO), "the key operational challenges are identifying Information Centers of Gravity, developing either non-kinetic or kinetic courses of action and defining the associated measures of effectiveness." They explain that "IO is really about affecting how an opponent thinks, and plans in relation to one's perception about a particular set of issues." As such, "traditional military maps and symbology are often inadequate for accurately portraying the situation." The IDC is therefore developing "new approaches and techniques for determining and displaying Information Centers of Gravity." The IDC has created what it calls both 2-dimensional

and 3-dimensional "knowledge landscapes" to map "information spaces." Essentially, these are technologies for visually representing change in vast competing narratives over time. Within the IDC, a Star Trek-like command center set at Ft. Belvoir, Virginian,

> individuals will be able to freely enter, navigate, plan, and execute operations within Perceptual and Knowledge Landscapes. This capability begins the transition from Information Dominance to Knowledge Dominance. The IDC is instantiating such entities as smart rooms, avatars, square pixel displays, polymorphic views, and other technologies for directly interacting with virtual domains. This will take us to the next paradigm of human-machine interaction within the multi-dimensional spaces required for Information Operations.

"Information operations" have moved from the cockpit of Boyd's fighter jet to the level of grand strategy. Heath and Woodcock explain that "Information Operations in support of civil-military interactions [are] becoming increasingly more important as non-kinetic [read: nonviolent] courses-or-action are required." Arquilla and Ronfeldt (1999) explain this phenomenon by arguing that "The world is turning anew into a highly charged battleground of ideas; it is not just a world in which material resources are the objects of protracted, often violent competition. In this emerging world, the key to success will likely lie in managing informational capabilities and resources skillfully—i.e., strategically."

Therefore, they assert that "'soft power' is taking precedence over traditional, material 'hard power'." The information-based, soft power paradigm that they advocate "emphasizes the primacy of ideas, values, norms, laws, and ethics." "[R]ather than being state-centric, its strength may likely stem from enabling state and nonstate actors to work conjointly. The driving motivation of noopolitik cannot be national interests defined in statist terms." Instead, the paradigm seeks to "empower networks of state and nonstate actors," to "encourage states to cooperate in coalitions and other mutual frameworks."

While they argue that the U.S. has yet to develop this paradigm for pursuing national strategy and that a paradigm shift is necessary to deal with the challenges of the Information Age, it seems clear that at least some of the physical and conceptual infrastructure is already in place at the IDC and in the minds of many other theorists. The questions that remain are in regard to the potential benefits and perils of such a grand attempt at VMC.

VMC: Less Effective *and* More Insidious?

Though the idea that information should be the lynchpin of the new American way of war is the new conventional wisdom, not everyone is convinced. In a recent book of case studies which examines the value of intelligence in war, military historian John Keegan (2003) provides plenty of examples in which knowledge of an adversary did not lead to victory. In the case of the Battle of Crete in World War II, for example, the British knew when, where, why, and how the Germans would descend upon the island. The British were still defeated. At the Battle of Midway, often portrayed as the classic intelligence victory, he demonstrates that pure chance played at least, if not more, of a role in the U.S. victory than did good intelligence. Thus, he cautions that "Foreknowledge is no protection against disaster. Even real-time intelligence is never real enough. Only force finally counts." In stronger terms still, he addresses the purveyors of the new conventional wisdom:

> It has become part of the conventional wisdom that intelligence is the necessary key to success in military operations. A wise opinion would be that intelligence, while generally necessary, is not a sufficient means to victory. Decision in war is always the result of a fight, and in combat willpower always counts for more than foreknowledge. Let those who disagree show otherwise.

Others have also noted that the will to fight and to keep fighting is still key to victory and worry that the United States' open desire for nonviolent, non-lethal, precise, information technology-driven wars will be viewed not as a new form of power, but as weakness. In Dunlap's (1996) fictional piece, "How We Lost the High-Tech War of 2007," the commander of the rag-tag, guerrilla force that defeated the U.S. explains that

> …it became part of our strategy to capitalize on television's power to influence decisionmakers by aiming to wage war in the most brutish—and public—way… [W]e used ruthless tactics openly to intimidate the American people and break their resolve… The 'revolution in military affairs' did not, therefore, make warfare less murderous; war never developed into the almost genteel electronic exchange that some foresaw… Such hideous experiences destroyed predictions of 'non-lethal' conflicts made by over-enthusiastic cyberprophets… We expected that the U.S. would try to wage this supposedly 'bloodless' war by assaulting us from afar with cyberarms. Only the soft, convenience-loving West would think that the loss of electrical power or phone service would stop us.

Could it really be that the quest for nonviolent, non-lethal, precision "cyberarms" could lead to *more* rather than less brutality? If the drop in public support for U.S. operations in Iraq—after six months of televised kidnappings and brutal decapitations—is any indication, then Dunlap may not be too far off.

Next, the wisdom of even attempting to achieve "information dominance" has come under fire. Gregory Witol (1998) cautions that "attacking the decision maker's ability to perform rational calculations may cause more problems than it hopes to resolve… Removing the capacity for rational action may result in completely unforeseen consequences, including longer and bloodier battles than may otherwise have been." The dream of bloodless information war ignores Clausewitz's principles of fog and friction in war: perfect knowledge is unattainable, and war is always unpredictable. This is especially so when attempting virtually to control the minds of others.

Yet, it should be clear at this point that VMC does not just encompass denying information to an adversary. It involves the use of deception on a massive scale. Much information must be denied to an adversary, but one cannot leave an information hole. One must replace that missing information with other information meant to deceive, to condition a response in the adversary that is beneficial to one's own side. This is where VMC begins to sound more insidious than old-fashioned warfare. Latimer (2001) explains that, historically, "By the virtue of the serious nature of war, it may sometimes be justifiable and even necessary to deceive one's own side."

We must, therefore, be sensitive to the historical and cultural influences which are driving our military leaders in the direction of VMC. When the U.S. pulls out of Somalia because of images of a dead U.S. soldier being dragged through the streets, the U.S. military moves closer to a VMC strategy. When the U.S., fearing casualties, is only willing to use air strikes from above 10,000 feet against Serbia, it moves closer to a VMC strategy. When each enemy civilian death is a media event, when we bemoan and televise the loss of each U.S. soldier in combat, the military moves closer to a VMC strategy, while potential adversaries grow more brutal. But we must ask ourselves: Are we ready for global "information dominance" by the U.S. military? Are we ready for "*knowledge dominance*"? We should be careful what we wish for; we may long for the good old days of mere physical destruction.

Conclusion

In a round-about way, this essay is a call for more study of the military by STS scholars. In the last thirty years, the U.S. military has undergone profoundly important technological and intellectual changes. But, studying the development of the most

obvious weapons systems, like ballistic missiles, nuclear weapons, or anti-missile systems, does not capture these profound changes. The technological changes enabling the shift towards a VMC strategy are embodied in less obvious IT systems like the IDC, JSTARS, Global Hawk, the Global Information Grid, Blue Force Tracking system, and many others. The intellectual shifts are occurring in obscure service journals, where military theorists and practitioners debate the nature of the world and reinterpret Clausewitz, Jomini, and Sun-tzu through the lenses of cutting edge science like chaos and complexity theories. Looking at the headlines and calling for more nonviolent options is not enough. The U.S. military *has* been listening. They *have* been attempting to become a more nonviolent, non-lethal force, but in a way that many of us may ultimately regret, both in terms of its potential to be *less* effective at subduing adversaries and *more* effective at eroding civil liberties here at home. If "virtual mind control" and "knowledge dominance" are worrisome terms to us, then STS must expand its study of the military if it is to make critical but effective interventions into the realm of defense policy.

Bibliography

Arquilla, John and David Ronfeldt. 1999. *The Emergence of Noopolitik: Toward and American Information Strategy*. Santa Monica: RAND.

Barnett, Thomas P.M. 2004. *The Pentagon's New Map: War and Peace in the Twenty-First Century*. New York: G.P. Putnam's Sons.

Boyd, John R. 1976. "Destruction and Creation." unpublished essay.

_____. 1987. "Organic Design for Command and Control." unpublished briefing.

_____. 1996. "The Essence of Winning and Losing," unpublished briefing.

Coram, Robert. 2002. *Boyd: The Fighter Pilot Who Changed the Art of War*. Boston: Little, Brown and Company.

Dunlap Jr., Charles J. 1996. "How We Lost the High-Tech War of 2007." *The Weekly Standard*: http://www.weeklystandard.com/Content/Public/Articles/000/000/001/569nzbrd.asp.

Freniere , Col. Robert W., Cmdr. John Q. Dickmann, and Cmdr. Jeffrey R. Cares. Spring 2003. "Complexity-Based Targeting: New Sciences Provide Effects," *Air & Space Power Journal*: http://www.airpower.maxwell.af.mil/airchronicles/apj/apj03/spr03/freniere.html.

Hammond, Grant T. 1994. "The Paradoxes of War." *Joint Forces Quarterly*: 7-16.

_____. 2001. *The Mind of War: John Boyd and American Security*. Washington, D.C.: Smithsonian Institution Press.

Hanson, Victor Davis. 1989. *The Western Way of War: Infantry Battle in Classical Greece*. New York: Alfred A. Knopf.

Heath, James E. and Alexander E.R. Woodcock. 1999. "The Challenge of Emerging Information Operations." paper delivered at Command and Control Research and Technology Symposium. Newport, RI: U.S. Naval War College.

Keegan, John. 2003. *Intelligence in War: Knowledge of the Enemy from Napoleon to Al-Qaeda*. New York: Alfred A. knopf.

Latimer, Jon. 2001. *Deception in War*. New York: Overlook Press.

Murray, Williamson and Major General Robert H. Scales, Jr. 2003. *The Iraq War: A Military History*. Cambridge, MA: Harvard University Press.

Sawyer, Ralph D., Trans. 1994. Sun-tzu, *The Art of War*. Boulder: Westview Press.

Szafranski, Richard. 1997. "Neocortical Warfare? The Acme of Skill." Pp. 395-416 in *In Athena's Camp: Preparing for Conflict in the Information Age* edited by John Arquilla and David Ronfeldt. Santa Monica: RAND.

Weigley, Russell F. 1986. "American Strategy from its Beginnings through the First World War." Pp. 408-443 in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* edited by Peter Paret. Princeton: Princeton University Press.

Witol, Gregory. 1998. "International Relations in a Digital World." Pp. 65-76 in *Cyberwar 2.0: Myths, Mysteries, and Reality*, edited by Alan D. Campen and Douglas H. Dearth. Fairfax, VA: AFCEA International Press.

[i] For my discussion of Boyd's ideas I am drawing from one of his unpublished essays, two briefings, and two biographies. In that order, they are Boyd 1976, Boyd 1987, Boyd 1996, Hammond 2001, and Coram 2002.