Purpose in Mission Design

Understanding the Four Kinds of Operational Approach

Simon Murden, Ph.D.

I F "THE FIRST, the supreme, most far reaching act of judgment that statesmen and commanders must make is to establish," as Clausewitz put it, "the kind of war on which they are embarking, neither mistaking it for, nor trying to turn it into, something that is alien to its nature," it is sobering to realize how often they get it wrong.[1] Today, the difficulty that Western political leaders have in articulating clear and coherent aims is a profound problem. No amount of informed thinking about concepts and plans would have prevented the planning shortfalls that bedevilled the occupation of Iraq in 2003. But, beyond the political smoke and mirrors, operational planning itself often fails to generate the level of understanding required to embark on wars in complex social settings. In Afghanistan and Iraq, military planners would preside over inappropriate operational approaches and tactics, and were slow to perceive, understand, and manage transitions. Learning on the job proved a costly business, and strategic aims had to be left by the wayside.

In the light of Afghanistan and Iraq, the apparent shortcomings of operational planning have been much discussed. In traditional approaches to planning, commanders often dealt with the conceptual component of operations in rather intuitive ways. The concept of operations was often assumed in the commander's initial guidance and the formulation of objectives. But, in the context of today's wars in complex social settings, the commander by himself is unlikely to know enough about the political context, operational environment, and opponents to make fully informed judgements, and a poorly appraised concept of operations is likely to go straight to the school of hard knocks. What seemed to be required was a more collaborative planning process that drew on a broader base of knowledge to better understand the complexity and the conceptual options available.

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U.S. soldiers with 2d Brigade Combat Team, 1st Infantry Division, plan their next movement during combat operations in Korengal, Afghanistan, 22 April 2009. (SGT Matthew C. Moeller, U.S. Army)
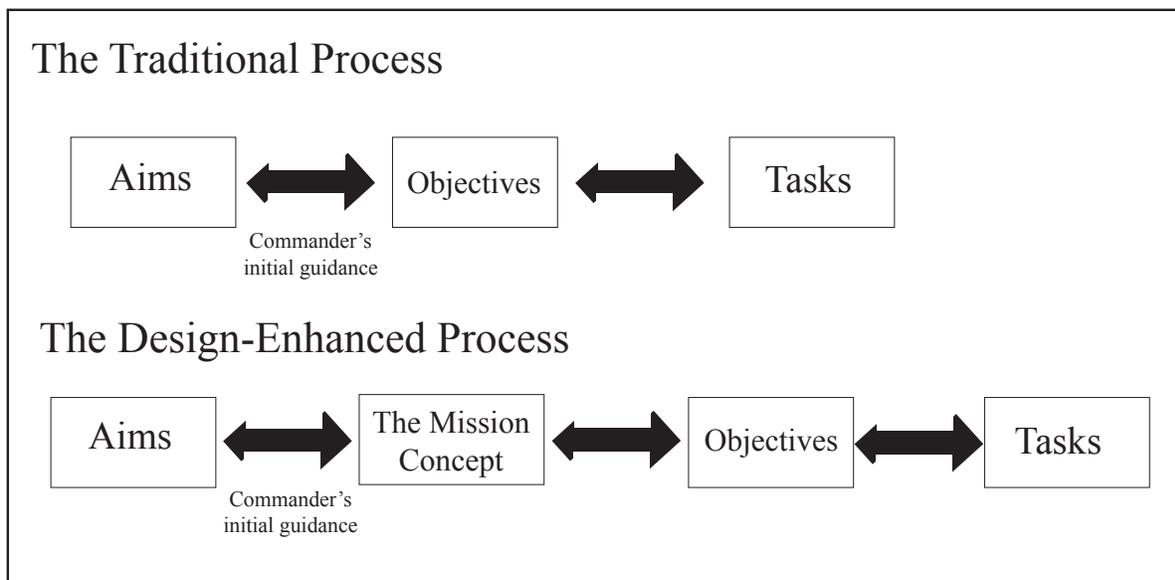
The U.S. Army addressed the conceptual-deficit with "design," and the Training and Doctrine Command primed work at the Combined Arms Doctrine Directorate and School of Advanced Military Studies to foster a reform discourse and write new doctrine.[2] Design would be institutionalized in Field Manual (FM) 3-0, *Operations*, and FM 5-0, *The Operations Process*, and described "a methodology for applying critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them."[3]

In comparison to traditional planning, a design-plus process envisaged a far more systematic handling of the conceptual component (Figure 1). Once strategic aims had been handed down by national command authorities and interpreted in the commander's initial guidance, a design team was to review a mass of potentially relevant information about the operational environment, the problem at hand, and the choices of operational approach available.[4] Then, after distilling the key information from the environmental frame, problem frame, and operation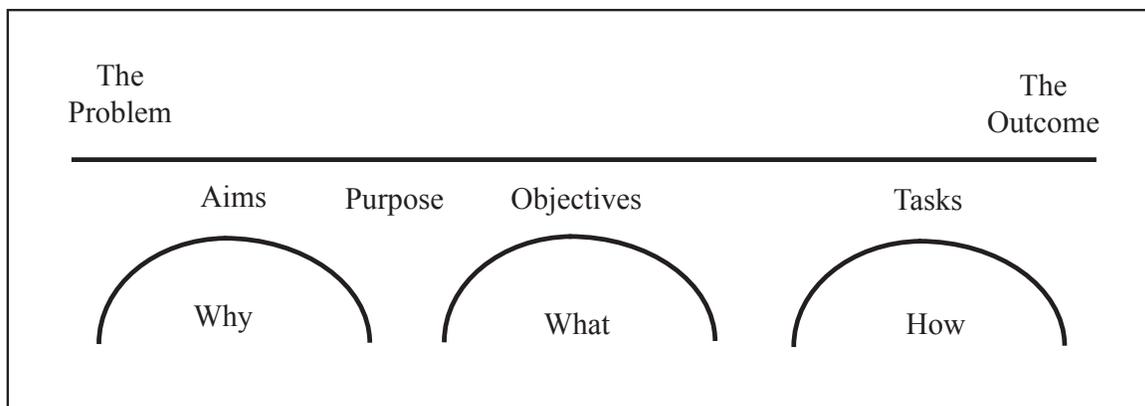al approach space, an initial design concept could be synthesized; it was essentially a hypothesis about solving the problem. Thereafter, the design concept was to be rendered into a campaign narrative and visualizations that could be handed on to planners, informing their selection of objectives and tasks (and focusing warfighting functions related to intelligence, force generation, movements, kinetic action, logistics, etc.) through the Military Decision Making Process.

Design promised to build a better bridge between strategic problem and desired outcome by better aligning mission aims, purposes, objectives, and tasks. In this sense, if designers generated an understanding of the why and the what of a mission, detailed planners rolled-out the what and the how (Figure 2).[5] However, while the need for design and the process by which it could be undertaken was well described in the emerging discourse and doctrine, a methodology for delivering the products of design was less well developed, leaving designers to jury-rig their own descriptions and visualizations.[6]

A number of concepts already existed that might support design work, notably Effects-Based Operations (EBO) and Full Spectrum Operations (FSO), but

The Traditional Process

Aims ⟷ Objectives ⟷ Tasks

Commander's initial guidance

The Design-Enhanced Process

Aims ⟷ The Mission Concept ⟷ Objectives ⟷ Tasks

Commander's initial guidance

Figure 1
The stages of the planning process.

Figure 2
Bridging the why-what-how of the mission.

there were issues with both. EBO problems are well known.[7] And, while FSO was a useful tool for describing the differing combinations of offensive, defensive, and stability operations that might be included in a given operation, it did not of itself embody the underlying purpose of a mission; the purpose being why something is to be done to an opponent and to what end. FM 3-0 simply noted that full spectrum operations begins with the commander's concept of operations "based on a specific idea of how to accomplish the mission."[8] In other words, FSO was good at constructing the "what-to-how" component of the mission bridge, but did less to help with the "why-to-what" part. And, if the operational concept does not fully capture the purpose of a mission, it does not capture the essence of the war and warfare being embarked upon. Design needed to be clear about the whys of the mission, and as Major Ben Zweibelson argued in *Military Review,* this meant finding ways of incorporating meta-understanding, questioning, and problem-solving in the design process : as Zweibelson put it, to look above the "chess pieces" in play, and what they might or might not do on the chess board, to instead ask deeper questions about the nature of skill, the motives that drive the human players, and the purpose of games altogether.[9] Design was more the realm of "why-centric" questions than "what-centric" ones, although designers had ultimately to synthesise both.[10] Zweibelson noted that "design

deliverables should achieve a fine balance between a deep understanding and the ability to explain it in the organization's preferred language. The deliverable must be compatible with detailed planning and tactical execution."[11]

The argument to be made in this article is that the why-to-what and what-to-how of mission planning can be better synthesized and visualized by modeling the interplay between two variables that capture the essence of mission purpose—a concept of warfare and a concept of the engagement/operations—with the nexus between them indicating four basic kinds of operational approach (Figure 3). The model provides a holistic picture of mission purpose (why-to-what), but is also capable of imparting mission intent to planners (what-to-how). Other concepts and warfighting techniques may also be contextualized within the visualization. Different operational approaches are associated with different supporting theories, concepts, and doctrines. Referring to a number of historical cases, the article goes on to highlight some of the factors that may get in the way of realizing the most appropriate operational approach for a mission.

## Understanding the Why-to-What of the Mission: The Concept of Warfare

Warfare is an interaction, a duel with a political aim, pursued with a purpose (why something is to

be done to an opponent, and to what end) calibrated to prevail in the duel and so achieve the aim. In *On War*, Clausewitz developed a concept of warfare in which, fundamentally, there were two kinds of purpose: the first was to completely overpower the opponent, if not destroy it altogether; the second was the more limited purpose of extracting concessions from an opponent. But, limited purpose did not necessarily mean limited means, with both purposes demanding the destruction of the will *and* capacity of the opponent to resist.[12] However, Clausewitz also exhibited a growing awareness that the ideal of overpowering the will *and* capacity of the opponent might be modified by political considerations and friction. Not all wars could or should be waged to the maximum exertion and extent; "in war many roads lead to success."[13]

In reality, total and limited warfare are normally calibrated at a different level of destructiveness. The purpose of total warfare—hereafter to be described as decisive warfare—involves the overthrow or destruction of the "will *and* capacity" of the enemy to resist. The purpose of limited warfare—hereafter to be described as persuasive warfare—primarily involves an attempt to persuade the opponent to give up or come to terms.[14] Persuasive warfare might include the application of substantial increments of violence, but ultimately its purpose is not to destroy the will *and* capacity of the opponent, but to change its will and behavior short of decisive warfare. Thus, in the concept of warfare represented in Figure 3, the degree of persuasiveness-decisiveness is calibrated according to the intent to destroy the "will *and* capacity" of the opponent to resist (decisiveness) versus the more limited intent of acting upon the opponent's will and behavior (persuasiveness).

The difference between persuasive and decisive purpose is often reflected in the information domain of warfare. The force engaged in decisive warfare is likely to be focused upon information operations intended to demoralize, confuse, and misdirect the opposing force as a prelude to destroying its will *and*
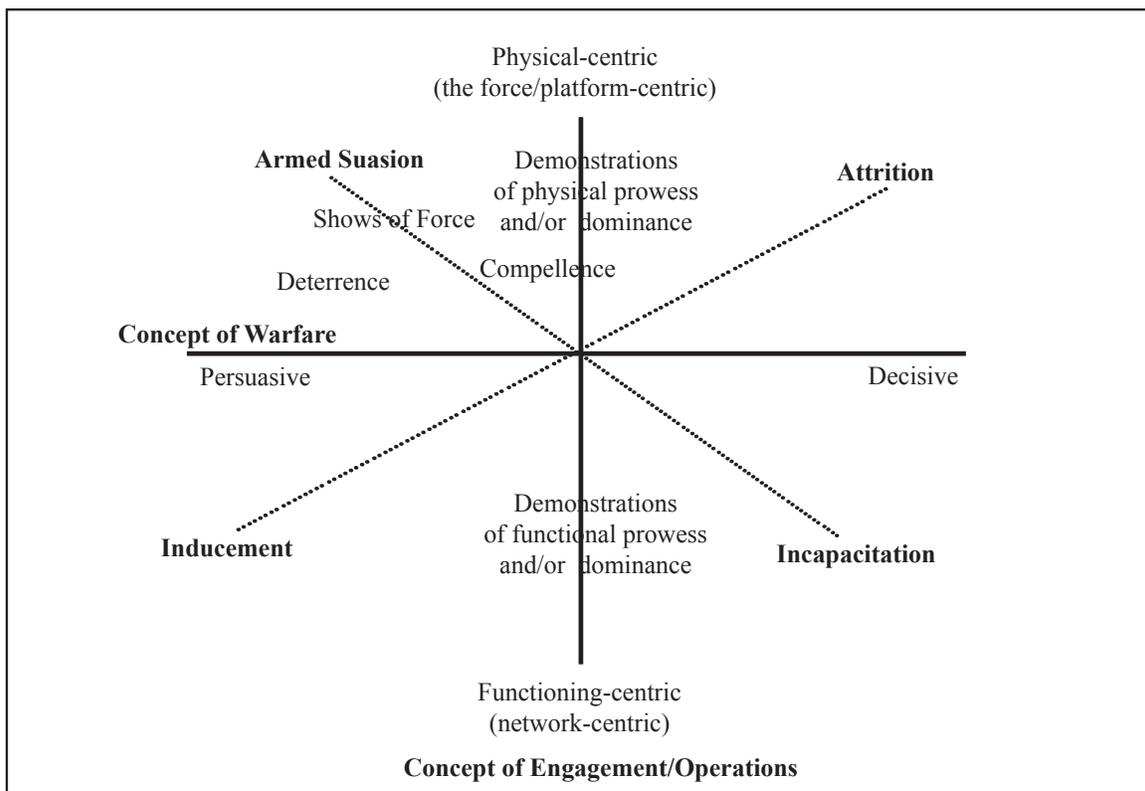
Figure 3
Nexus of the concept of warfare and concept of the engagement/operations.

capacity to resist. The force engaged in persuasive warfare tends to be more concerned about changing human minds and behaviors through incentives and disincentives, bargaining, and compromise.

Understanding the "What-to-How" of the Mission: The Concept of the Engagement/ Operations

Conceptualizing the "what-to-how" of a mission is not straightforward. The way that battle is joined changes over time, and there are numerous equally valid ways of representing how the combat is to be conducted. Clausewitz himself employed a distinction between offense and defense to cast insight upon the battle and campaign, but he was aware that every age produced its own *modus operandi*.[15] The proposition made in this article is that perhaps the best way of capturing the essence of operations in the contemporary world is not through the offense-defense distinction but instead in terms of relative degrees of physical-centricity and functional-centricity.

Clearly, almost all combats embody some element of the physical and functional, but different degrees of emphasis are evident. A force with a physical-centric approach to the engagement and operations tends to think about the duel with the opponent, first-and-foremost, in terms of the physical clash of forces: of manpower, weapons platforms, and supporting logistics. On the other hand, a force with a relatively functioning-centric approach is inclined, and must be able, to scan the battlefield for the nodes and links of its opponent's systems of functioning, prioritizing attacks on such things as command and control targets, bottlenecks in deployment and logistics, or some aspect of the broader political context in which the opposing force functions.

Synthesising the "Why-What-How": The Four Approaches to Operations

Clausewitz himself did not put together his concept of warfare and concept of the engagement/ operations in any systematic way. It is perhaps one of the things that he was still to work through at the time of his death. As Michael Howard observed of *On War*—

> The two types of war and the possibility that each might need to be conducted according to different principles receive . . . only the most glancing of references. In general the strategy dealt with in this book is simply the strategy, as Clausewitz saw it, of Napoleon; of war as "absolute" as the dictates of a powerful political motivation could make it.[16]

For any mission, political and military leaders must determine—wittingly or not—what concept of warfare and concept of the engagement/operations are to be adopted (and why). Turning to Figure 3, it is clear that once leaders have made their choices between different concepts of warfare and concepts of engagement/operations, there are four basic kinds of operational approach: the *attrition*, the *incapacitation*, the *armed suasion*, and the *inducement*.

While any mission, in principle, might be addressed with any of the four kinds of operational approach, in practice, the choices are often constrained. Political and military leaders may have preconceived ideas about the purpose of war and how to wage it. The choices available to leaders may also be limited by the nature of their own military's capabilities, or because certain kinds of operational approach are forced upon them by an opponent. Powerful states that possess more broadly equipped armed forces will have more choices of operational approach available to them.

The other point to make is that the two axes depicted in Figure 3 represent spectrums. In this sense, no one operational approach can be entirely separated from the others. All missions are likely to incorporate the traits of more than one of the four approaches. Moreover, it is possible that multiple approaches might be quite deliberately weaved together to achieve the overall aims of the mission. One of the four approaches may be appropriate at a particular time and place during a mission, and another in another time and place. And, most campaigns transition over time, either by design or as the duel between opponents unfolds.

The Attrition

When the purpose of warfare is to seek the decisive defeat of an opponent and a relatively physical-centric concept of the engagement/operations is adopted, the operational approach is one of attrition.

In the 19th and early 20th centuries in Europe, attrition was the dominant operational approach with the outcome of wars determined in the combat between bodies of men, guns, tanks, airplanes, ships, etc. The period was also associated with concepts and doctrine, such as Jomini's geometry, that promised to deliver a more efficient attrition. While the German army's ability to maneuver its forces did more to threaten opponents with an eventual functioning crisis (by clattering through rear areas and supporting logistics, etc.), the massive encirclement battle remained a very physical-centric kind of approach. And, in any case, the German army's maneuvering style of attrition would completely break down into a head-on clash on the Western Front in World War One. In terms of the planning challenge, attrition is relatively straightforward; thus, traditional forms of planning process may suffice.

The Incapacitation

Where the purpose of warfare is the decisive defeat an opponent principally by means of a systematic attack on its systems of functioning, the operational approach is what might be called one of incapacitation. Throughout history, armies have attacked both the physical existence of their opponent and the way that they function. For Alexander the Great, the physical and moral prowess of the Macedonian army got him a long way, but some of his greatest victories were won because he understood how to disrupt the opponent's functioning: specifically, how a penetrative attack toward the opponent's commander, whether successful or not, could undermine the ability of very hierarchically run armies to remain on the battlefield.

In the 20th century, the possibility of choosing an incapacitation approach was greatly increased by new technology. The modern incapacitation battle grew out of the stalemated attrition of World War One. The German army, which had long preferred a maneuvering style of attrition, would develop what was to become known as the *blitzkrieg*. While World War II would eventually break down into a giant attrition, the German army would initially find great success with the use of motorized airland penetrations toward distant incapacitation targets in conjunction with techniques that sent pulses of physical, moral, and temporal disruption through opposing forces. The incapacitation battle

used surprise, mobility, and deception to preempt, dislocate (to render the opponent's dispositions irrelevant, bypass its greatest physical strength), and disrupt (the opponent's cohesion, positioning, and willpower).

U.S. airpower theorists were not far behind. Amid the strategic air war over Europe, the U.S. Army Air Force aspired to a different approach to that of the attrition being pressed by RAF Bomber Command. Mapping the systems of the German war economy, U.S. air planners scanned the battlefield for key nodes and links (ball-bearings, synthetic oil, bridges), the targeting of which might have a disproportionately large *effect* on the enemy's functioning. In the latter part of the 20th century, the U.S. would go on to develop the technologies and concepts that would bring a functioning-centric approach to a new level. U.S. Air Force Colonel John Warden did describe a historic step-change in what it was possible to think about doing to the functioning of an opponent, and the approach was to be written up as EBO. By the 1980s, the U.S. Army had also developed the AirLand Battle.[17]

The Armed Suasion

When the purpose of the duel is to persuade the opponent to do one's will as a consequence of a physical-centric method, the operational approach is one of *armed suasion*, which includes compellence and deterrence. Compelling an opponent to stop doing something or to concede to some demand may involve the use of considerable amounts of force, but it is the *psychological effect* of the threat or actual use of force that is intended to achieve the desired outcome. The "show of force" and the demonstration of physical prowess are the stock-in-trade of compellence. The attempt to *deter* an adversary from taking a course of action that it might otherwise choose tends to embody lower levels of actual force, although it often relies on the threat of unleashing great physical force. It is the threat conveyed to the adversary about likely failure (denial) and/or the prospect of losses (punishment) that persuades the opponent to abstain from the undesired behavior.

Armed suasions are prone to escalate, perhaps best demonstrated by the record of strategic bombing in the 20th century. When deterrence fails, armed suasions may quickly transition to compellence, and thereafter across the persuasive-decisive boundary

toward outright attrition. However, armed suasion constituted the dominant operational approach in the main U.S.-Soviet balance over more than 40 years of the Cold War.

The Inducement

When a persuasive purpose is pursued with a functioning-centric method, the approach is what might be called an *inducement*. Whereas the essence of armed suasion is to change the opponent's will and behavior by virtue of physical intimidation and actual physical harm, the inducement is more concerned with changing the opponent's functioning, systems of functioning, and the broader context in which it functions. While inducement often involves direct negotiation, an inducement approach may achieve its purpose without necessarily forcing a conscious moment of decision from the opponent; on occasions, the opponent may almost imperceptibly evolve (or be evolved) to do something else or even be something else.

The inducement may involve the application of force as a precursor to other inducing techniques or as an inducing tool itself. But, since the use of force often produces resistance that runs counter to inducing change in the opponent's system or its broader environment, inducements tend to involve more other-than-war techniques including bargaining, creating alternative systems of functioning, constructing new social narratives, and addressing the deeper causes of conflict in the broader environment. Where an opponent itself is resistant to change, or cannot be induced because of some political consideration or friction, changing the entire context in which the opponent functions may be the only way forward. Needless to say, this less direct approach to inducement is likely to be very time- and resource-consuming.

The inducement-type approach has become associated with the counterinsurgency and stabilization operations of some Western states, with the focus being on tackling the causes of subversion and "winning hearts and minds." And, the conceptual updating of inducement operations by U.S. forces was among the most important developments of the wars in Afghanistan and Iraq; the lessons of previous COIN campaigns were supplemented by the additional streams of culture-centric warfare,

information operations, immersed Full Spectrum Operations , and systems-based stabilization operations. If the U.S. Army did not exactly make itself the master of the inducement operation, it did write up a new conceptual state of the art.

Friction in the Operational Approach Space

In an ideal world, statesmen and commanders would be clear about the purpose of any mission, be aware of all the operational approaches conceivable, and have the flexibility to select whatever approach seemed best. In reality, military leaders rarely consider all approaches equally. National command authorities may influence the approach selected, but commanders are also limited by powerful frictions. The most important of these frictions are: 1) the predisposition of the force; 2) conceptual dissonance or disagreement in the joint/coalition campaign; 3) physical, cognitive, and institutional frictions in identifying and managing transitions.

The predisposition of the force. In *On War*, Clausewitz argues that the nature of war is to escalate toward the overthrow or destruction of the opponent's will and capacity; he was predisposed to think that a head-on trial of strength is "the first-born son of war."[18] To this day, commanders remain wedded to retaining the decisive warfare option, keeping it in the bank lest one day they meet a decisively minded opponent. Indeed, with the emergence of Unified Land Operations in 2011, the U.S. Army has given renewed emphasis to the utility of decisive force.[19] Of course, this is a cognitive and moral statement likely to predispose the operational approach of the force across the breadth of missions.

The reality is that armed forces are rarely in a position to be truly flexible in the selection of their operational approach. When a military has had an overriding national mission or has had much of a certain kind of experience, it will have specialized its organization, equipment, doctrine, culture, and training, and will be predisposed to address problems using the familiar approach. Indeed, a particular kind of operational approach may become so deeply entrenched that it produces it own vested interests. Commanders and soldiers may actively resist attempts to employ unfamiliar approaches as undesirable and dangerous. And, it must be said, the

military that seeks to multi-role across a breadth of operational approaches risks being jack-of-all-trades and master of none in comparison to its more specialized competitors.

The institutional resistance to certain operational approaches may be particularly marked when their selection requires significant changes in the organization, culture, and planning systems. For instance, the force developed for decisive warfare is likely (for good reasons) to be more hierarchical in its organization, command culture, and planning technique than one more practiced in persuasive warfare. Clearly, this was the challenge that faced U.S. forces in Afghanistan and Iraq, with the introduction of design being part of the inter-approach reform process.

Furthermore, no matter how many times it is said that doctrine should guide rather than prescribe, all militaries have a problem with mechanistic application; it is inherent to hierarchical organizations. The

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problem does not simply concern well-established doctrines. Western militaries have also been prone to the fad. For instance, EBO is undoubtedly a powerful tool when used in support of an incapacitation approach; it maps the nodes and links of the opponent's functioning, enabling the most efficient and effective selection of targets. However, while EBO can, in principle, be applied to support any of the four operational approaches, its efficacy is more questionable on the persuasive side of the concept of warfare spectrum where it is more difficult to map the nodes and links, much less be sure about the intangibles of the human mind and social behavior. In persuasive warfare, EBO risks constructing a tangle of speculations that might either prime a series of quite spurious actions or paralyze decision making altogether. Short of some technological breakthrough in the realm of reading and influencing human intentions and behaviors, it just may be that other kinds of supporting concepts are more useful in persuasive warfare.

Conceptual dissonance or disagreement in the joint/coalition campaign. War planning is never a fully rational business. While design promises a more systematic process for selecting the best approach, it is perhaps optimistic to believe that it can finally trump the dysfunctional political and bureaucratic machinations that go on behind the scenes. Today, in our age of democratic politics, bureaucracy, joint and coalition operations, and warfare in complex social settings, the potential for political and bureaucratic "churning" is perhaps greater than ever. The Iraq war in 2003 grew out of a deeply dysfunctional planning process, with its contested legitimacy contributing to the failure to specify clear strategic aims, never mind chart and resource the required operational transitions.

The war in Afghanistan in 2001-2002 is another illuminating case. In the initial stages of planning, the political leadership at the Pentagon appears to have been minded to try out an armed suasion—specifically, a demonstration of physical dominance in order to persuade the leadership of the Taliban to give up Osama bin-Laden and his lieutenants—but with the military leadership slow to articulate a plan, the CIA would take the lead.[20] The CIA's analysis was that the leader of the Taliban, Muhammad Omar, would never give up Bin-Laden, and this meant that the only realistic aim was regime-change to be pursued with a decisive purpose. Thus, two concepts and plans were initially in play, and they do not seem to have been entirely reconciled by the time that the air campaign started on 7 October 2001. Rather than focusing airpower against Taliban forces in the north, in order to support a decisive attrition and advance using Northern Alliance allies, much of the early bombing was focused on target sets around Kabul and Kandahar that looked more appropriate to an armed suasion. In fact, there would be an awkward hiatus in the campaign, and it was not until the refocusing of aerial bombing in the latter part of October 2001 that the ghost in the machine seemed finally banished.
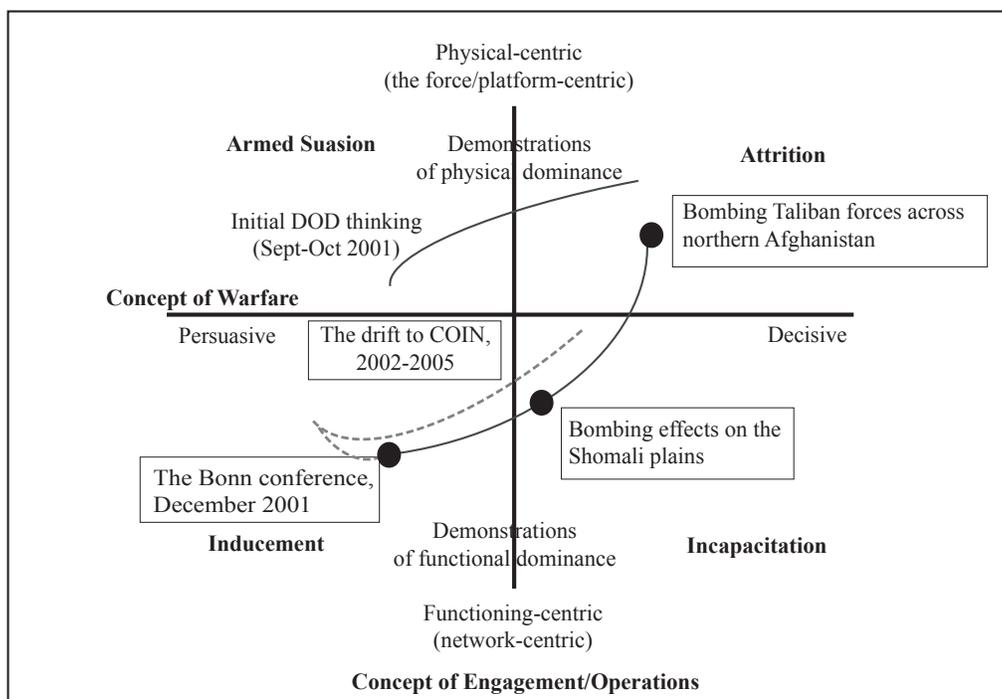
Figure 4
Track of the operational approach in Afghanistan, September-December 2001.

Nevertheless, it must be said that the Afghan campaign in 2001 was to be something of a conceptual *tour de force*. Following the attrition of Taliban forces across northern Afghanistan, as a precursor to an advance on Kabul and the south by the forces of the Northern Alliance, the campaign would undergo a rapid inter-approach transition. The pathway to the transition began with the aerial bombing that destroyed the Taliban's defenses on the Shomali plains, just north of Kabul. With the breaking of Kabul's defenses, it became clear to many Pushtun tribal factions associated with the Taliban that the movement was about to lose control of Kabul and so would soon cease to be a national government.[21] At that point, many of these Pushtun factions sold much of their stake in the Taliban, instead choosing to bargain new deals with the new order.

Thus, the Shomali moment was where an attrition suddenly transitioned to the incapacitation-inducement boundary: it was a "demonstration of functional dominance" that precipitated what could be regarded as a "trading cue" that manifested a new political game in town; a game that functioned under the supervision of the United States (see Figure 4). The

subsequent convening of Afghan and international stakeholders at the Bonn conference in December 2001 was a further demonstration of this functional dominance. However, the supporting concepts, plans, and resources required to progress the move to an inducement would not be marshaled until much later in the decade, and in that time the Taliban would recover and reorganize some of its functioning. In that period, the operation in Afghanistan would drift back toward an attrition.

Physical, cognitive, and institutional frictions in identifying and managing major transitions. Gaining and retaining the initiative is one of the principal reasons for thinking more systematically about the conceptual component. Yet, once a course of action is established, commanders may be reluctant to conduct major reviews in case they reveal serious flaws. Militaries may talk of "critical thinking," Zweibelson observes, but rarely know how far to take it, and the "problematizer" risks "marginalization" and "obstructionism" if attempts to "reframe" the mission go too far.[22] Unless major transitions in a mission are identified and planned in the original design concept (or an option for them

is), the attempt to reframe a mission may encounter varying degrees of friction.

Whereas intra-approach reframing may involve some refinement of the objectives, techniques and tasks, inter-approach transitions may involve changing the whole concept of warfare and/or concept of operations. If the concept of warfare has to be reframed unexpectedly, the original purpose of the entire campaign is under question. Reframing the concept of operations may raise fewer questions about the feasibility of the original purpose, but is still more demanding on the force than an intra-approach transition. For instance, the belated move of U.S. forces in Iraq after 2003 to an inducement approach required a tremendous refit of the U.S. Army's supporting concepts, command culture, organization, lines of effort, and tactics. And, these changes took between two to six years to roll out.

Conceptual Capability

The advent of design has put U.S. forces on the verge of a step change in conceptual capability, and the kind of gross oversights or misconceptions stemming from a neglect or ignorance of the conceptual component seem less likely to be repeated. However, work is still to be done. A methodology for delivering the products of design has yet to be clearly described and agreed.

The argument made in this article is that a holistic picture of the conceptual choices available to statesmen, commanders, and designers can be realized by charting mission purpose in terms of a nexus between a concept of warfare and a concept of the engagement and operations. Figure 3 is capable of describing and visualizing the purpose of a mission and the choices of operational approach available. It is also capable of communicating to planners the mission intent of the operational approach and the anticipation of any transitions.

The other point made in the article is that design by itself will not necessarily deliver the conceptual step-change. A lot can still go wrong in the design-enhanced planning process. Beyond the problem of getting clear and coherent strategic aims from national command authorities, design may be distorted by powerful forces and frictions, some of which designers themselves may scarcely be aware. The most important of these relate to the physical and cognitive predisposition of the force, conceptual dissonance in the joint or coalition campaign, and the various frictions involved when confronting inter-approach transitions. The result of these frictions may be the selection and/or maintenance of an inappropriate operational approach or an operational approach that does not properly align the why-what-how of a mission. *MR*

NOTES

1. Carl von Clausewitz, *On War*, edited by Michael Howard and Peter Paret (London: Everyman's Library, 1993; originally published by Princeton University Press, 1976), 100.

2. Huba Wass de Czege, "Systemic Operational Design: Learning and Adapting in Complex Missions," *Military Review* (January-February 2009): 2-12; Stefan J. Banach and Alex Ryan, "The Art of Design: A Methodology," *Military Review* (March-April 2009): 105-15; Stefan J. Banach, "Educating by Design: Preparing Leaders for a Complex World," *Military Review* (March-April 2009): 96-104; Clinton J. Ancker, III, and Michael Flynn, "Field Manual 5-0; Exercising Command and Control in an Era of Persistent Conflict," *Military Review* (March-April 2010): 13-19.

3. Field Manual (FM) 5-0, *The Operations Process* (Washington, DC: U.S. Government Printing Office [GPO], March 2010), 3-2, point 3-1.

4. FM 5-0, 3-11, point 3-58.

5. FM 5-0, 2-7; Steven Bracklin, "Reframing Army Doctrine: Operational Art, the Science of Control, and Critical Thinking," *Military Review* (November-December 2012): 68-72.

6. Banach and Ryan, 106; Ben Zweibelson, "Seven Design Theory Considerations: An Approach to Ill-Structured Problems," *Military Review* (November-December 2012): 80-89, 86-87.

7. James N. Mattis, "USJFCOMM Commander's Guidance for Effects-based Operations," *Proceedings* (Autumn, 2008): 18-25.

8. FM 3-0, *Operations*, chap. 3, "Full Spectrum Operations" (Washington, DC: GPO, February 2008), point 3-5, 3-2.

9. Zweibelson, 81-82.

10. Ibid., 83.

11. Ibid., 86.

12. Clausewitz, 102-110; Peter Paret, "The Genesis of *On War*," Introductory Essay to Clausewitz, *On War* (London: Everyman's Library, 1993), 3-28, 23-24.

13. Clausewitz, 107.

14. Ibid., 99-100, 102-106, 109.

15. Ibid., 717-18.

16. Michael Howard, "The Influence of Clausewitz," Introductory Essay to Clausewitz, *On War* (London, Everyman's Library, 1993), 29-49, 31.

17. Bill Benson, "Unified Land Operations: the Evolution of Army Doctrine for Success in the 21st Century," *Military Review* (March-April 2012): 2-12, 6-7.

18. In Chapter 2 of Book One of *On War*, Clausewitz argued that "we must not fail to emphasize that the violent resolution of the crisis, the wish to annihilate the enemy's forces, is the first-born son of war. If the political aim is small, the motives slight and the tensions low, a prudent general may look for any way to avoid a major crisis and decisive actions, exploit any weaknesses in the opponent's military and political strategy, and finally reach a peaceful settlement. If his assumptions are sound and promise success we are not entitled to criticize him. But he must never forget that he is moving on devious paths where the god of war may catch him unawares. He must always keep an eye on his opponent so that he does not, if the latter has taken up a sharp sword, approach him armed only with an ornamental rapier," Clausewitz, 113-14.

19. Benson, 2, 9-11.

20. Richard A. Clarke, *Against All Enemies: Inside America's War on Terror* (New York: Simon and Schuster, 2004), 274-75.

21. Bob Woodward, *Bush at War* (New York: Simon and Schuster, 2002), 252-54.

22. Zweibelson, 83 and 84.