

A Practical Guide to Design

A Way to Think About It, and a Way to Do it

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MILITARY COMMAND IS difficult. This difficulty arises in part because the commander's operational environment renders near-complete understanding and prediction impossible. Yet understanding and prediction *of a kind* are necessary. Since the commander's lethal and cooperative work occurs in a socio-political and ethical context, he must understand a complex mix of military and nonmilitary factors and visualize how his units' and other actors' interventions will play out. It follows that commanders face the same challenges that vexed political theorists from Socrates to Machiavelli to Marx and statesmen from Caesar to Madison to Obama. Military commanders, like political theorists and statesmen, need political judgment to interpret and intervene in the world.¹

The Challenge of Prediction

Commanders' orders are based on interpretations and predictions.² Field manuals, operations orders, and commanders' decisions contain embedded hunches about the world and about causes and effects. For instance, (a) *if* my soldiers live among the population, and (b) *if* my soldiers "partner" with host-nation forces and attack irreconcilable extremists, and (c) *if* my interagency partners and I visit regularly with key leaders, and (d) *if* my troopers help build schools, *then* villagers will support the local government instead of the insurgency. These informed hunches about the future are *if-then* hypotheses based on the commander's interpretation of the environment. Of course, these hypotheses and interpretations are fallible.

The challenge of prediction in human affairs has always plagued philosophers, political scientists, and statesmen. Their predictions have been notoriously unreliable.³ Socio-political phenomena, which include wars, are not susceptible to simple cause-effect analysis. Causes and effects in human affairs are tangled, multi-causal, multi-directional, and contingent.⁴ Success depends partially on humility amidst the contingency that suffuses the dynamics of socio-political

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PHOTO: General Douglas MacArthur wades ashore at Leyte, Philippine Islands, 1944. (U.S. Army)

affairs. Satisfactory “end states” seldom take the form predicted or initially desired.⁵ A commander knows that—despite his best efforts—his interpretive and predictive judgment will have significant gaps and errors.

A good commander embraces and accounts for his fallibility. If surprise is possible during a battalion’s attack against a tank platoon in a remote battlefield, how much more likely is it to occur when a field commander directs attacks against multiple enemies and amidst a heterogeneous population, a fragile host-nation government, a precarious coalition, and a maze of bureaucracies and independent organizations? Commanders used to speak in terms of “getting into the enemy’s decision cycle.” The relevant number of decision cycles the commander now must consider has vastly increased.⁶

The Army’s approach to Design provides commanders with a way to think about the dynamic factors at play in a world of irregularities, surprises, and fleeting opportunities. Below, I describe how commanders may use doctrinal Design to do the

conceptual work of understanding, visualization, and description. Design exploits the talents of the staff (among others) to help commanders answer four fundamental questions relevant to any action. I next describe the ethos of Design in terms of eight leadership values, which I suggest are typified in the leadership style of General David Petraeus. Finally, I describe one way to do Design, which emphasizes collaboration, competition, and board work. This way is consistent with both doctrine and the approach put forth by the U.S. Army School for Advanced Military Studies.

Understanding, Visualizing, and Describing

If the judgments of pundits are notoriously unreliable, their direct influence is also relatively inconsequential. However, military commanders exercise judgment, and their decisions carry direct consequences.⁷ Commanders exercise judgment when performing the activities of understanding, visualizing, and describing. Commanders must understand their



U.S. Army, CPL Carol A. Lehman

U.S. Army GEN David H. Petraeus, commander of International Security Assistance Forces, presents a coin to SPC Vincent Contreras of Charlie Company, 2nd Battalion, 502nd Infantry Regiment, 2nd Brigade Combat Team, 101st Airborne Division at Panjwai District Center in Kandahar Province, Afghanistan, 7 October 2010. General Petraeus also presented a coin to each of the soldiers present at the ceremony commending their efforts in support of Operation Enduring Freedom.

environment and the principal problem their units confront. They must visualize those overall conditions that compose a more desirable environment as well as those broad actions they will take with their troops, resources, speech, and relationships to nudge the environment toward an improved state of affairs.⁸ Finally, they must describe the fruits of their understanding and visualization to superiors, subordinates, fellow commanders, nonmilitary persons, and several publics.

In some cases, commanders need nothing but thoughtful solitude to understand and visualize. As staffs focus on orders, commanders focus on the environment itself to create the contextual understanding and concepts that will frame their units' actions.⁹ So long as staffs are competent at performing, say, the Joint Operation Planning Process or the Army's Military Decision Making Process, they will produce adequate orders in accordance with their commanders' visions that compose their planning guidance, intent, and operational approach.¹⁰ Occasionally, commanders might invite staff personnel to sift ideas about planning details, but—on the whole—commanders feel competent to provide staff with adequate guidance and direction.

If, however, a commander desires help understanding and visualizing, Design becomes an option.¹¹ Commanders once “made their bones” fighting fictional Krasnovians on a remote battlefield. The focus was on the attack, the movement to contact, and the defense. Such single-minded focus is no longer possible.¹² Before, most commanders were concerned only with the “M” of the operational variables: political, military, economic, social, information, infrastructure, physical environment, and time (PMESII-PT) and gave little thought to the “C” of METT-TC (the mission variables: mission,

enemy, terrain and weather, troops and support available, time available, and civil considerations).¹³ Now commanders must make sense of a dizzying array of acronyms and terms that represent very real factors. Troopers are still doing the attack, the movement to contact, and the defense, but they perform these missions “among the people” and amidst a volatile, contingent mix of socio-political and ethical factors.¹⁴

Military professionals describe this volatile mix of factors as being *ambiguous, complex, uncertain, and ill-structured*. When trouble appears, there is no consensus about what the fundamental problems are, how to solve them, what the desired “end state” should be, and whether an “end state” is achievable or not.¹⁵ Now, suppose that no person can single-mindedly achieve adequate understanding of the contingent swirl of factors that compose such problems. Suppose, “many heads are better than one.” Suppose we come to fully appreciate the tragic possibility of rightly solving the wrong problem.¹⁶ Might Design become an attractive option, albeit one without guarantees?

Design places the staff in the position to help a commander perform the activities of understanding, visualizing, and describing.¹⁷ If a commander can exploit his staff officers' (and others') education, experiences, and ingenuity, his own thinking may improve; consequently, his planning guidance and commander's intent may improve.¹⁸ *It follows that the Army's approach to Design does nothing more than give a bit of structure to those periodic conversations any commander has with his staff officers to improve his appreciation of the mission.* Of course, the practice of Design benefits from a multiplicity of perspectives, whether these come from military officers, scholars, interagency representatives, nongovernmental organization (NGO) workers, or indigenous persons.

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The structure that Design imparts is straightforward. Design merely asks the commander and his thinking partners to maintain and revise provisional answers to four questions.¹⁹ These questions seem to be fundamental to any human action, whether that action is buying a cup of coffee, “fixing Ramadi,” or planning a political campaign. The four questions follow.

What is going on in the environment? The answer to this question helps the commander “fill out” the first part of what Field Manual (FM) 5-0, *The Operations Process*, calls the *Environmental Frame*. This question prompts officers to capture “the history, culture, current state, and future goals of relevant actors in the operational environment.”²⁰ Officers should consider the tendencies, over time, of the various relationships between the actors and the environment as a whole. They should consider also various potential best-case, worst-case, and intermediate scenarios as the unit alters its degree of intervention in the environment over time from doing nothing to becoming fully committed.²¹

What do we want the environment to look like? The answer to this question helps the commander “fill out” the second part of the *Environmental Frame*, which is the “end state.” This question prompts staff officers to posit “a sought-after future state of the operational environment” in terms of a system of desirable conditions.²² Guidance and directives from the next echelon of command will shape the end state as well; however, humility is in order. A military unit is unlikely to impose successfully an “end state” on an ever-changing world. A military unit is more likely to nudge reality—in cooperation with other socio-political actors—toward an improved state of affairs through lethal, nonlethal, and cooperative interventions at multiple points of potential opportunity.

Where—conceptually—do we act to achieve our desired state? The answer to this question helps the commander “fill out” the *Problem Frame*. This question prompts the commander and staff to prioritize where—conceptually—the unit must act to move closer to a desirable state of affairs. For instance, does the commander envision that the fundamental problem he faces is related to governance or population security? Or is the problem related to economic development or security-force training? Or must the unit act to mitigate corruption

or engender reconciliation with former enemies?²³ The group should make a special effort to identify those tensions between actors that the commander might exploit to his advantage; e.g., that tension between Sunni tribal leaders indigenous to Iraq and Al-Qaeda in Iraq (AQI) fighters that defined the Anbar Awakening in Iraq. How a commander chooses to understand or frame a problem will influence how he chooses to “solve” it.

How do we act and speak in order to achieve our desired state? The answer to this question helps the commander “fill out” the frame that FM 5-0 calls the *Operational Approach*.²⁴ This question prompts the commander and staff to explain, in broad terms, how the commander will employ his troops, resources, speech, and relationships to nudge the environment toward a more desirable state.

Answering the above questions does not constitute a sequential, four-step procedure. The questions can be answered neither sequentially nor with any sense of finality. A group will confront the four questions iteratively. A well-honed Design effort will approximate addressing the questions simultaneously.²⁵ Of course, the answers always remain provisional and open to revision because the commander’s understanding and visualization develop and change during planning and (especially) execution.

Design also entails the use of narratives and drawings.²⁶ For each question, the group communicates its answers in terms of a simple, clear graphic and a written narrative.²⁷ Leaders routinely communicate in terms of narratives and graphics. See, for instance, Figure 1, which depicts General Petraeus’s briefing slide from his service as the top commander in Iraq.²⁸ He used the “Anaconda Slide” before Congress in April 2008 to describe his operational approach to defeat Al-Qaeda in Iraq. He continues to show this slide as an example of the conceptual, big-idea work that a leader must do; hence, this slide and the general’s accompanying congressional testimony compose the graphic and narrative that help answer Design’s fourth question regarding the operational approach for, in this case, defeating AQI.

Despite this slide’s clarity, military professionals should wonder how many conversations, arguments, white-board sketches, battlefield circulations, scholarly insights, historical analyses, and counterinsurgency-theory debates must have preceded this single

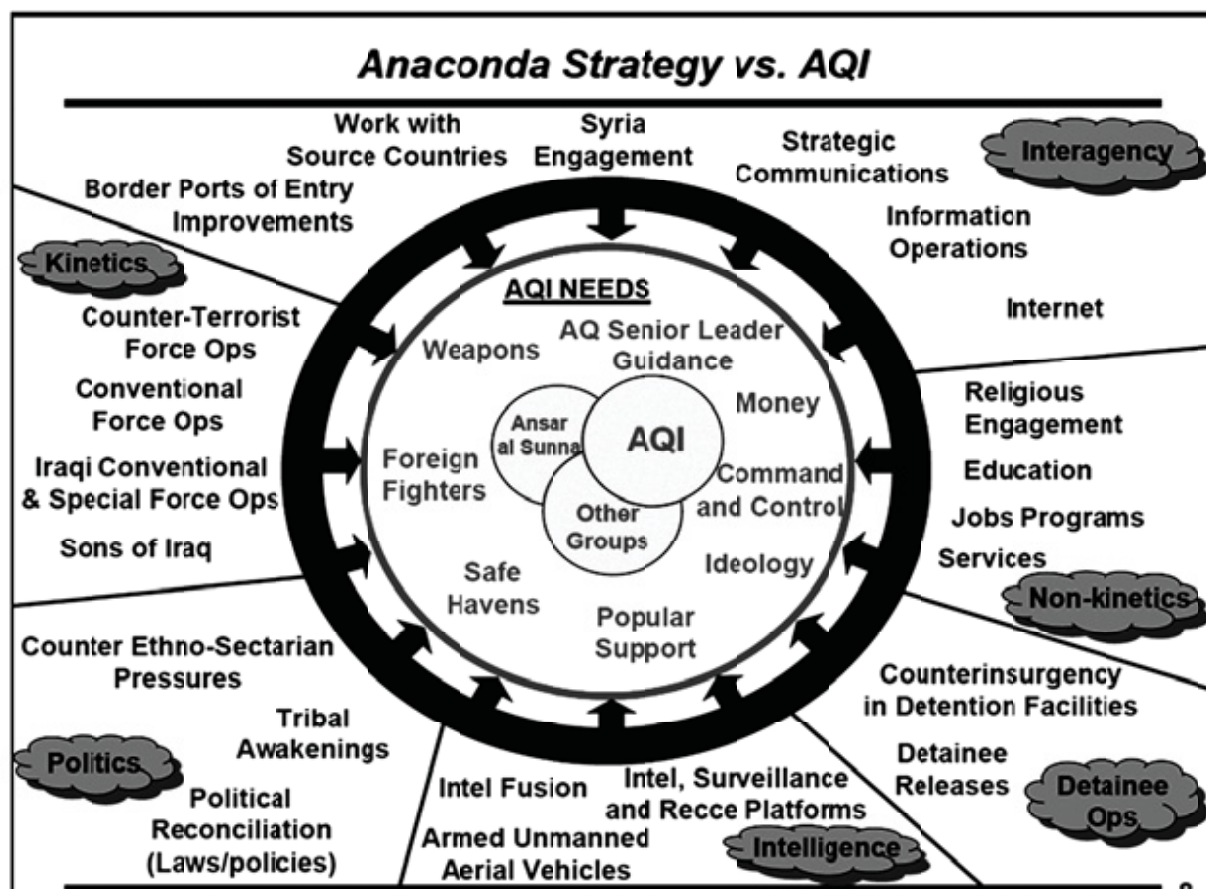


Figure 1: Anaconda strategy vs. Al-Qaeda in Iraq.

slide’s creation. A certain approach to leadership and staff work is necessary to exploit the contributions of these various activities. Design simply disciplines a leader and his organization to cultivate dialogue and clash of views by following Petraeus’s example; i.e., to think deeply, to argue productively, and to describe vividly—using pictures and words—the results.

The Ethos of Design

Petraeus, who led the creation of Army FM 3-24, *Counterinsurgency*, exemplifies Design thinking.²⁹ In a series of talks (many available on YouTube) since January of 2010, he describes an approach to leadership consonant with Army Design without explicitly invoking the term. He says the fundamental job of a leader is to “get the Big Ideas right”; i.e., a leader must “determine the *right overarching concepts and intellectual underpinnings*.” These Big Ideas are the broad concepts that give direction to an organization. The term “Big Ideas” signifies the sort of conceptual

work that proceeds from a commander’s understanding and visualization.³⁰

In what follows, I compare the ethos of Design with Petraeus’s reflections on leadership. I find eight important values embedded in Army doctrine. These values compose what I call the ethos of doctrinal Design. These values are:

- Benefits that arise from “collaboration and dialogue” among persons with multiple perspectives, experiences, and expertise.³¹
- Necessity of cultivating a clashing of opinions or, in FM 5-0’s words, a “competition of ideas.”³²
- Importance of confident commanders who can fearlessly cultivate dialogue, collaboration, and clash.³³
- Importance of humility and a sense of fallibility insofar as one’s first “cut” at a complex problem will likely be incomplete or wrong; hence, the importance of assessments and revisions of one’s understanding and visualization.³⁴

- Importance of all staffers, commanders, troopers, and partners possessing a shared understanding.³⁵
- Importance of recording the results of collaboration, dialogue, and clash via the communicative media of spoken and written narratives and pictures.³⁶
- Importance of cultivating a “learning organization,” which entails posturing the staff to seek out relevant perspectives, consider them in an efficient manner, develop creative ways to learn about the environment and employ the unit’s resources, and actively seek to confirm and revise the answers to Design’s four questions.³⁷
- Importance of holistic understanding; i.e., the ability to understand how several disparate variables within and around one’s area of responsibility are interrelated.³⁸

Petraeus on Leadership

What follows below are excerpts from a speech Petraeus delivered to the American Enterprise Institute on 6 May 2010 about the creation of the Army counterinsurgency manual. He explains how the creation of Big Ideas “typically requires an ability to think creatively and critically about complex challenges, constantly testing one’s assumptions and often embracing *new concepts*.” This approach, which is consonant with Design thinking, served him well during his commands at Fort Leavenworth, Iraq, and Central Command. Petraeus explains:

- “In my experience, big ideas don’t fall out of a tree and hit you on the head like Newton’s apple. Rather, they start as seeds of little ideas that take root and grow. The growth takes place primarily in discussion—*spirited, freewheeling, challenging discussion* . . .”

- “We sought to *broaden the usual pool of participants* involved in drafting a doctrinal manual. In so doing, we engaged not just members of *our military* and *partner militaries*, but also *diplomats, aid workers*, representatives of *NGOs* and *human rights groups, think tank members, journalists*, and, also, of course, *those with experience* in Iraq and Afghanistan.”

- “The *collaboration and discussions* spurred by the COINdinstas created a *good bit of debate*—and, periodically, some *healthy discord*.”

- “*We sought to create situations in which individuals could thrash out different views* . . . Ultimately, *the various debates resulted in a sharper, more thoughtful product*, and they also likely *helped with the ultimate communication and implementation of the concepts* when we completed the project.”

- “*We sought to encourage young leaders to think for themselves, to improvise, to exercise initiative, and to challenge the conventional wisdom*.”

- “Enabling this in 2006 was the fact that all of us in uniform had worked hard over the years to ensure that our services were ‘*learning organizations*’ . . . After all, war requires constant learning and adaptation, and that is particularly true in the conduct of counterinsurgency operations. As the COIN manual observed, the side that learns and adapts the fastest often prevails.”

Petraeus describes a leadership style whose ethos is integral to Design. He habitually enlists the help of talented persons. With this implicit admission of humility, he invites others—veterans, scholars, civilians, experienced military officers—to think through a situation with him. He remains an active participant throughout the discussions and debates. He is able to benefit from the “competition of ideas” because he is a confident leader who purposefully cultivates dialogue and clash. He strives for holistic understanding. Finally, he records the results of his and his interlocutors’ thinking to ensure that all persons—coalition partners, troopers, Congress—know and share his understanding of the situation.

Three Building Blocks of Design

The only way to learn Design is to do it.³⁹ I attempt to describe how to do Design in such a way that an instructor or planning leader can, in a short amount of time, begin doing Design’s conceptual work. First I describe the three building blocks of Design. I next suggest that four principles should guide the group in their work. I also explain an

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efficient way to get a group of officers to start doing Design quickly.

There are three building blocks of Design thinking: systems and subsystems, narratives, and models.⁴⁰

Systems and subsystems. When an officer confronts a new challenge, he should approach a white board or butcher-paper easel with markers in hand. His goal is to depict the key actors, whether these be persons or groups (Taliban leaders, Afghan Army leaders, farmers, NGO representatives, the president), institutions (Congress, the United Nations, bureaucracies), or structures (tribal systems, civil society, economic systems). The officers must focus on the relationships between the actors and discern any ongoing dynamics or trends (reconciliation, reintegration, corruption, exploitation, heightened grievances, economic downturn, unstable civil-military relations, etc.).

Thinking in terms of systems and subsystems also means attempting to map the relationships between the various actors, institutions, and structures to discern tensions, flows, and feedback loops.⁴¹ The intent is to focus less on specific cause-effect relationships within the environment and more on how the multiplicity of factors combine to form a holistic, dynamic system. The system, just like a human person, takes on a dynamic of its own that is not reducible to its individual parts.⁴² Moreover, the individual parts take on their full significance only when seen within the context of the whole.

As an example, suppose a group desires to reform the Bowl Championship Series (BCS) for college football. Who are the actors and what are the relationships among them? The key actors might include the various football conferences, universities, television networks, businesses, advertisers, recruiters, high school athletes, college athletes, coaches, and the sports media. Which of these entities are allies or want the same things? Which of these entities are antagonistic or want vastly different things? What dynamics, such as money and recruiting trends, are in play? What does the group seeking to reform the BCS want? If the BCS system continues as it is, what will happen? What indirect or unintended effects reinforce the current BCS system and its putative pathologies? What indirect or unintended effects pull the BCS system in a more desirable or more undesirable direction?

Narratives. As the officers create a holistic view of the environment, they must discern and describe the actors' "narratives" or "stories." Officers should cultivate the skill of perspective-taking. Officers should, as much as possible, describe how various actors see and explain the world using those actors' own words and images.⁴³ Narratives represent different "takes" on the same reality. They represent the various actors' meaning-infused interpretations of the world. Consider two of the many prominent narratives relevant to the Israeli government's evacuation of the Jewish settlers from Gaza in 2005. A Jewish settler's narrative articulates what it means to settle in Gaza as part of a divine plan. A Jewish officer's narrative articulates what it means to be a military professional who carries out the will of the state regardless of the Jewish settlers' religious beliefs. These contrasting narratives obviously clash. When military professionals think about cultural understanding or the human terrain, these narratives are the key.⁴⁴

Models. A model, within the context of Design, is a descriptive or causal account from one perspective about what is going on in the environment. There are as many models as there are actors in the environment. A model, which is often embedded in an actor's narrative, comprises the actions a specific actor performs, the purposes for which he takes these actions, and the actor's narrative. For example, consider the following stylized model used to describe the typical Afghan farmer and his causal story: a farmer has a choice between supporting the Taliban or the local government and the coalition. The farmer sees that the coalition soldiers clear the area of Taliban enemy, which the farmer appreciates. However, the farmer waits to see if the coalition soldiers leave or stay. If they stay, the farmer will tend to support the government to the extent that he trusts he will be protected from the Taliban. However, if the coalition soldiers leave, survival instincts will make the farmer likely to support the Taliban. This model is one of many explanatory or causal stories at play in Afghanistan.⁴⁵

Other insight-inducing models exist, beside first-person models such as the farmer's. An actor does not completely understand his situation, particularly when complexity and counterintuitive dynamics are in play.⁴⁶ Hence, an officer might usefully consult "outsider" views as a fruitful complement to the

various first-hand narratives and models. Suppose officers are studying how to reform a corrupt police force. They may choose to consult the abundant scholarly literature on institutional corruption and past attempts to mitigate it. Such study will enable the officers to encounter a treasure chest full of relevant perspectives produced by scholars who have studied corruption in various contexts. Indeed, there might be some useful, counterintuitive lesson, relationship, or dynamic relevant to battling corruption in the scholarly literature that might be helpful to a commander and staff officer. Other “outsider” perspectives are available from various bureaucracies and organizations.⁴⁷ Wrestling with these models improves the officers’ ability to evaluate the various hypotheses, “takes,” or “cuts” at what is going on.⁴⁸

Four Guiding Principles of Design

Avoid forcing a solution onto a problem.⁴⁹ *Forcing or imposing* a solution to achieve an inflexibly predetermined end state may work when building a chair in one’s garage or even killing 30 enemy soldiers on a hill in a remote desert. Force and imposition are likely not effective amidst the realities of working cooperatively with bureaucrats, indigenous governments, coalition forces, civil society, and citizens. Moreover, force and imposition are slippery endeavors amidst the contingent swirl of socio-political events.

Allow the “solution” to emerge over time from the context. Commanders accomplish this through the thoughtful employment of troops, resources, speech, and relationships. This mindset, I suggest, is what enabled an improvement in Iraq during the “surge” of 2007 to 2008. Tension existed between foreign Al-Qaeda forces and indigenous Sunni actors fighting against or resisting the coalition. A forced solution would have entailed doing a critical-vulnerability analysis of both AQI and the Iraqi Sunni “extremists.” This analysis would have been followed by a series of deliberate attacks on both AQI and Iraqi Sunni forces until both groups were decimated. However, *by thoughtfully focusing not on the plan but on tensions within the environment*, commanders and staffs at various levels were able to exploit the AQI-Iraqi Sunni tension, realign the friend-and-foe relationships in their areas, and achieve an improved

state of affairs in which coalition troopers and Iraqi Sunnis were pointing their rifles not at each other, but toward AQI fighters.⁵⁰

Consider taking actions to learn about the environment. Imagine soldiers probing an enemy defense with light attacks over a period of time. The purpose of these attacks is to learn how the enemy will respond to a big attack. Commanders should incorporate similar actions to confirm or deny windows of opportunity for cooperative or lethal actions.

Reframe the problem, if necessary. When the environment changes substantially or the commander finds that his hypotheses about the environment, the problem, and the operational approach are wrong, *reframing* is in order. More brainwork will be necessary to help the commander perform his conceptual responsibilities in accordance with the activities of understanding, visualization, and description, *if* the commander desires the help.

Getting Started

Go to a white board. Attempt to depict the actors, relationships, and dynamics that compose subsystems and systems that are in the environment or affect what happens in the environment. Attempt to discern each actor’s narrative. Next, create a model of how each of the key actors sees the environment. Finally, if possible, check the scholarly literature for insight-inducing descriptions and accounts.

There is really no obligatory technique for doing this board work. Different persons will strive to pull the conversations and board work in various directions in accordance with their experiences, education, training, institutional affiliation, and views of the world.

This collaborative friction is a good thing. The instructor or group leader should resist the urge to force too quickly the officers into a certain direction. The leader should especially resist the urge to give the practitioners a template or a framework. Simply allow the officers to argue, investigate, critique, and develop a shared understanding of the environment by attempting to describe the actors and especially their relationships on a whiteboard.

The point of these messy *design drawings* is not to create an actual, near-perfect representation of what is actually going on.⁵¹ The participants are not striving for scientific understanding; they are simply attempting to get a “bite” on what is going

on as quickly and thoroughly as possible.⁵² Their drawings serve only to help them achieve a common focus, raise new questions, consider several points of view, and incorporate scholarly and practitioner perspectives.⁵³ These drawings may appear busy and incoherent to the outsider. That is irrelevant. So long as they are the focus of fruitful argument and shared understanding, all is well. The Design scene is a bunch of persons around a whiteboard—markers in hand—sharing viewpoints, arguing, and creating a shared understanding for each frame.

Meanwhile, discussions, debates, and additional board work will ensue. These may become heated. The commander or planning leader should manage them, but the leader must not squelch the competition of ideas too early. Nevertheless, each of these conversations, debates, and drawings must come to a point. The purpose of this work is to enable the leader, who is a Design participant, to create a narrative that answers the first fundamental question, “What is going on?”

As the leader begins to settle upon a certain understanding of the environment, the group must slowly set aside the messy design drawings and begin production of a refined *presentation drawing*. The presentation drawing emerges from the various design drawings and any other work produced to gain understanding of the environment. This presentation must be clean and clear enough to facilitate the commander’s description (his narrative) of the environment to persons inside and outside of the unit.⁵⁴

For each of the remaining three questions, the officers repeat the activities of thinking via messy design drawings, producing a clean, vivid presentation drawing and a written or spoken narrative that, together with the presentation drawing, describe the commander’s understanding or visualization.

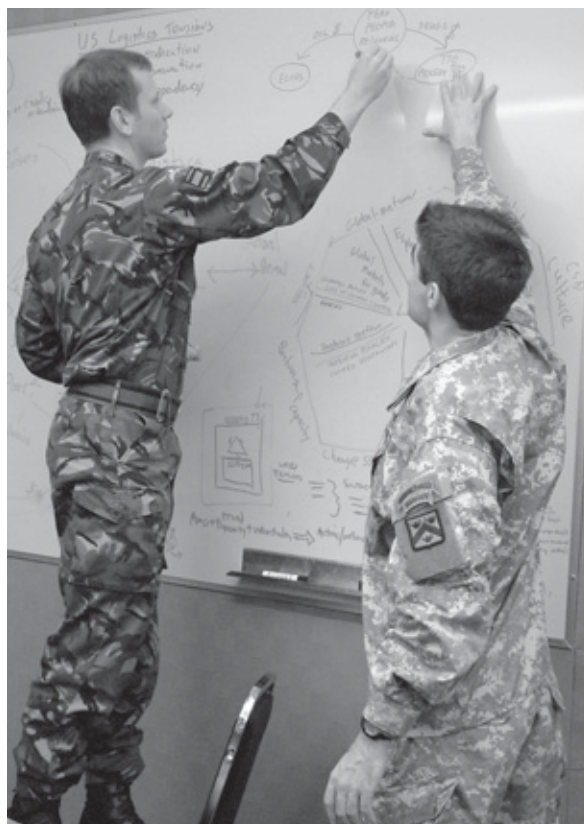
The fourth presentation drawing, which depicts in broad terms how the commander will achieve an improved state of affairs, should use terms and concepts taken as much as possible from operational art: lines of effort, decisive points, objectives, tasks, conditions, end states, defeat mechanisms, stability mechanisms, and so forth. This technique, while not obligatory, does help translate the conceptual work emanating from Design into immediately useful guidance for

detailed planning; however, *take deliberate care to preserve the group’s appreciation of the holistic context within which these lines of effort will operate.*⁵⁵

The narrative that describes the commander’s operational approach is called the mission narrative. Some consideration should be given to craft the mission narrative in such a way that all stakeholders can appreciate the commander’s visualization of how to achieve the mission.⁵⁶

Petraeus’s “Anaconda Slide” provides one example of a clean, vivid presentation drawing that helps describe his answer to Design’s fourth question, the operational approach.

Design entails production of a variety of messy *design drawings*. These drawings serve to catalyze thinking and focus disciplined questioning. This thinking informs the answers to Design’s four questions and enables the production of clean *presentation drawings* and accompanying oral and



Prudence Siebert/Fort Leavenworth Lamp

MAJ John Clark of the United Kingdom and MAJ Edward Croot, U.S. Army, draw links among Peruvian elites, the government, the general population and entities such as the drug economy while conducting a discourse on U.S. Southern Command during the Operational Command Workshop, 28 January 2008.

written narratives that describe a commander's Big Ideas with respect to Design's four questions. The more officers practice Design, the better they will be at it; however, Design practitioners must remember that their answers to the four questions are provisional and will likely need to be reframed.

The Design Option

The practice of Design is optional. It provides a coherent structure within which a commander and his staff can think about the environment, the problem, and the operational approach. *Design's inefficiency is useful only insofar as it helps the commander understand, visualize, and describe.* One imagines that various commanders will employ Design differently—if they choose to use it at all.

So long as the ethos described above and exemplified by General Petraeus is allowed some influence in the operations process, the commander and his staff officers will develop into a powerful learning organization. Leaders must be tolerant of dialogue, collaboration, and clash. A leader must also be capable of managing it. The fruits of Design include, without guarantees, a more thoughtful commander's planning guidance and commander's intent as well as narrative and graphic descriptions of the environment, the end state, the problem, and the operational approach.⁵⁷ Each of these will, in turn, establish the Big Ideas that will drive the development of a unit's campaign plan, detailed planning for subsequent missions, and the exploitation of opportunities as they appear during mission execution. **MR**

NOTES

1. This article is intended to be a faithful albeit contestable description of Design as articulated in U.S. Army Field Manual (FM) 5-0, *The Operations Process* (Washington, DC: U.S. Government Printing Office [GPO], 26 March 2010). I present this paper as a help to those struggling how to understand, teach, or do Design. My interpretation does emphasize certain elements that, while contained explicitly within FM 5-0, are not as prominently featured. These elements include the emphasis on political judgment, the four fundamental questions of Design, and the ethos of Design. Also, I have relied heavily on the example of GEN David Petraeus. His leadership style seems to exemplify Design thinking, albeit without the esotericism that attaches to too many other explanations of Design. Where possible, I buttress key points with substance from *Art of Design*, Student Text, Version 2.0, School of Advanced Military Studies, May 2010. I thank several colleagues for helping me think through problematic areas of Design, especially Mark Mumm, Len Lira, Tom Clark, Alex Ryan, Jay Nelson, and Dave McHenry. I thank especially my students in two different classes at Fort Leavenworth. This article does not say everything that needs to be said about Army Design, but it says enough to get people started and, one hopes, think more deeply about what we as military professionals are doing. Note: The SAMS text is available at <<http://www.cgsc.edu/sams/index.asp>>.

2. FM 5-0, para. 1-10.

3. See, for instance, Philip Tetlock, *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton: Princeton University Press, 2005).

4. See Rudra Sil and Peter J. Katzenstein, "Analytical Eclecticism in the Study of World Politics: Reconfiguring Problems and Mechanisms Across Research Traditions," *Perspectives on Politics* 8, no. 12. See also Craig Parsons, *How to Map Arguments in Political Science* (Oxford: Oxford University Press, 2007) and William Connolly, "Method, Problem, Faith" in *Problems and Methods in the Study of Politics*, eds. Ian Shapiro, Rogers M. Smith, and Tarek E. Masoud (Cambridge: Cambridge University Press, 2004), 340-45.

5. Although this statement may seem obvious, it is something that many officers continue to desire. This desire exists also in doctrine, which specifies that "every operation focuses on a clearly defined, decisive, and attainable end state." (FM 3-07, *Stability Operations* (Washington, DC: GPO, 6 October 2008), para. 4-41). The desire for a clear end state exists also in the seductive Powell Doctrine. For a discussion of this doctrine in its political and ethical dimensions, see William F. Felice's *How Do I Save My Honor? War, Moral Integrity, and Principled Resignation* (Lanham: Rowman & Littlefield, 2009), 83-86.

6. Of course, contingency arises also from nonhuman factors as well. Consider the political and military effects of the August 2010 floods in Pakistan, or the effects arising from a volcano in Iceland that stopped airline traffic throughout Europe in April 2010. It was an extended stay in Paris, attributable to volcanic ash, which enabled a *Rolling Stone* reporter to write a rather consequential story about the top commander in Afghanistan at the time, GEN Stanley McChrystal.

7. FM 5-0, vi.

8. FM 5-0, para. 2-37 and 2-53.

9. An order from a subordinate unit's higher command gives specific instructions appropriate to the general context of that higher command's operational environment. A subordinate commander must do the conceptual work necessary to, among other things, create the specific context that pertains to that commander's own piece of the environment. The subordinate commander must also prioritize and generate new tasks and objectives specific to the subordinate command's "local" environment. Studying and making sense of the higher order, which is the focus of mission analysis, is not the same thing as studying and making sense of the specific factors at play in the subordinate commander's environment.

10. *Ibid.*, para 3-2. See also para. 2-37 and 2-39, especially Fig. 2-2. An important point to reflect upon is the distinction between the sort of information that arises from, say, mission analysis and conceptual thinking. Facts, assumptions, limitations, tasks, etc. may well be "true" or "valid"; however, these discrete items are without meaning until put into a context. It is the commander, with the help from his staff, who provides the meaning by integrating these distinct items into a story or narrative. For instance, the theorist of international relations, Alexander Wendt, has called attention to the hypothesized fact that a certain person has a gun in his hand; however, that fact only takes on meaning when a story or narrative communicates whether the gun-holding person is a friend or an enemy. Obviously, perspective matters. It is the commander's job to provide this perspective. See also *Art of Design*, Student Text, Version 2.0, School of Advanced Military Studies, May 2010, 73.

11. *Art of Design*, 21. Many persons ask whether Design occurs before or during the Military Decision Making Process (MDMP). I argue it is best to think of Design not in temporal relation to MDMP, but as inextricably linked to the commander's activities of understanding, visualization, and description. Since a commander may desire to improve his understanding and visualization at any time during the operations process, design thinking may also occur at any time.

12. In testimony before the House Armed Services Committee on 16 June 2010, Petraeus stated, "Every insurgency is local. Therefore, every counterinsurgency has to be local. And you've got to understand the dynamics of each village and city . . . you know, we fought Afghanistan for seven years in seven one-year increments, but the fact is that we didn't capture—we didn't develop the sufficiently granular understanding of the areas, and that is what this all depends." See also LTG Michael T. Flynn, "Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan," published by Center for a New American Security, January 2010.

13. See, for instance, para. 1-21 in FM 5-0.

14. Of course, we have always fought among the population, but we have not sufficiently accounted for the cooperative and political roles that the military has played. In the recent past, the civilian and ethical dimensions of military work were emphasized neither in training nor in theorizing about the military profession. It is only now that the profession of arms is gaining an ample appreciation for the political and ethical factors that affect all military operations, not only counterinsurgencies and stability operations. See, for instance, Nadia Schadlow, "Organizing to Compete in the Political Terrain," a monograph published by the Strategic Studies Institute, July 2010.

15. *Ibid.*, para. 2-23. Other ill-structured problems might include the economic downturn, healthcare reform, poverty alleviation, etc. The problems that military professionals must confront are enormously complex. If there is to be a relatively durable solution to our campaigns, it will most likely not be the result of applying some tried-and-true doctrine or method that has worked in the past. Indeed, if durable solutions arise, they will arise as a result of a new instantiation of creativity informed by doctrine, scholarship, experience, and current circumstances, but not enslaved by them.

16. *Ibid.*, para. 3-26.

17. *Ibid.*, para. 3-1. See also the Preface.

18. *Ibid.*, para. 3-63, B-67, and B-68.

19. *Ibid.*, 19.

20. *Ibid.*, para 3-44.

21. *Ibid.*, para. 3-51.

22. *Ibid.*, para. 3-46. At some point, perhaps during detailed planning, the commander may want to consider a range of end states, to include a most-optimal, aspirational end state on the one hand and a minimally adequate, "good enough" end state on the other. Moreover, it might be useful to specify such aspirational and adequate end states for different time periods—18 months out, 3 years out, 5 years out, etc. I thank Dr. Jack Kem for this insight.

23. *Ibid.*, para 3-53.
24. *Ibid.*, para 3-58.
25. See *Art of Design*, 15. I thank my colleague, LTC Len Lira, for emphasizing this simultaneity in a series of conversations.
26. See, FM 5-0, para. 3-50, 3-52, and 3-59.
27. *Art of Design*, 15.
28. A slight variant of this slide is available in David Petraeus, "Multi-National Force-Iraq Commander's Counterinsurgency Guidance," *Military Review Special Edition, Counterinsurgency Reader II*, August 2008, 211.
29. FM 3-24, *Counterinsurgency* (Washington, DC: GPO, 6 December 2006). See chap. 4, "Designing Counterinsurgency Campaigns."
30. GEN David Petraeus's explication of the big ideas come from his "Commander's May 6 [2010] Speech at the American Enterprise Institute." See the transcript at <www.centcom.mil/en/from-the-commander/commanders-may-6-speech-at-the-american-enterprise-institute.html> (16 August 2010).
31. FM 5-0, para 1-31. See also *Art of Design*, 18-19 and Scott Page, *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies* (Princeton: Princeton University Press, 2007).
32. *Ibid.*, para 1-32. See also *Art of Design*, 200-201.
33. *Ibid.*, See also *Art of Design*, 57.
34. *Ibid.*, para. 1-7 and 1-20.
35. *Ibid.* The field manual's preference for shared understanding is expressed throughout, e.g., para. 3-4.
36. *Ibid.*, para. 3-50, 3-52, and 3-59.
37. *Ibid.*, para. 1-32.
38. *Ibid.*, Reflect upon the implications of, *ibid.*, para. 2-42 and, especially, para. 1-5.
39. *Art of Design*, 9.
40. This focus on systems, narratives, and models is loosely based upon Peter Checkland and John Poulter's *Learning for Action* (West Sussex: John Wiley and Sons, 2006). Checkland and Poulter describe a manner of inquiry called Soft Systems Methodology. This approach, which is taught at the School for Advanced Military Studies, is sophisticated, but it includes a handy Preamble entitled "A Ten-Minute Account of Soft Systems Methodology for Very Busy People." Soft Systems Methodology attempt to discern systems, narratives, and models is consistent with a broad range of scholarly approaches to studying socio-political phenomena.
41. *Ibid.* See also, 202.
42. Reflecting on the concepts of emergence and emergent causality are helpful in understanding the importance of a holistic, systems view of the environment. For a theoretical account of emergent causality as it applies to socio-political and ethical phenomena, see William Connolly's "Method, Problem, and Faith."
43. The relationship between the narrative and frameworks such as PMESII-PT is worth investigating. Although I cannot develop the argument here, I assert it is possible to set the PMESII-PT framework aside when attempting to describe the operational environment. Instead of attempting to discern, with no clear criterion for relevance or inclusion, what substance should go under each operational variable, it is more useful (and efficient) to attend closely to first-actor narratives. First-person actors, through their narratives, will reveal how they see the world in terms of politics, the military, economics, and so forth. The relevant substance will shine brightly through the various conflicting narratives. The analyst may then sort these variables in accordance with the PMESII-PT framework, but perhaps this is a useless step. The commander seeks to create a contextual, holistic account of the environment. Attending to conflicting narratives in an effort to create the commander's holistic understanding of the environment is superior to jamming items under "P," and "M," and "E" with the use of questionable criteria for relevance and absent context.
44. I gathered these narratives from a documentary film entitled "Gaza: The Fight for Israel," available at <<http://www.youtube.com/watch?v=ybRMfwkS-kk&feature=related>> (7 October 2010). For the political, economic, and ethically constitutive aspects of the narrative, see Rogers M. Smith, "The Politics of Identities and the tasks of Political Science," in *Problems and Methods in the Study of Politics*, eds. Ian Shapiro, Rogers M. Smith, and Tarek E. Masoud (Cambridge: Cambridge University Press, 2004), 61.
45. See GEN Stanley McChrystal, the former top military commander in Afghanistan, describe this model to a group of ambassadors at <<http://www.youtube.com/watch?v=3j6FX8DjuYQ>> (6 October 2010).
46. See Ian Shapiro and Alexander Wendt's "The Difference that Realism Makes," in *The Flight from Reality in the Human Sciences*, ed. Ian Shapiro (Princeton: Princeton University Press, 2005), 31-37.
47. *Art of Design*, 33.
48. *Ibid.*, 52.
49. *Ibid.*, 14.
50. *Ibid.*, 15-16. Also, see quotation by John F. Schmitt, 38: "The rationale is to pull out of the problem itself the logic for solving the problem rather than apply or adapt some predetermined logic."
51. *Ibid.*, 201.
52. *Ibid.*, app. D, which provides a useful catalogue of generic, albeit probing questions.
53. *Ibid.*, 68, 208.
54. For examples of the environmental frame, see *Art of Design*, 162, 193, and 194.
55. Commanders at the battalion level and above now routinely produce "campaign plans." These campaign plans, which are often part of a unit's base order in theater, comprise lines of effort, conditions, tasks, objectives, and the end state. If a commander and his staff answers Design's fourth question in terms of these elements of operational art (even if in skeleton form), they will have created a substantial link between Design, the development of the campaign plan and base order, and the execution of MDMP. Design helps a commander write his planning guidance and the commander's intent, which inform the campaign plan and MDMP. Of course, the campaign plan should also include objectives or tasks that will exploit enemy vulnerabilities and protect the vulnerabilities of the friendly military forces and the host-nation government. Thus, intelligence preparation and Design work inform the campaign plan.
56. FM 5-0, para. 3-66.
57. See FM 5-0, para. 3-63 to 3-67 for the Design concept.