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Charting a Strategic Course in Interesting Times

May you live in interesting times.

—Chinese proverb (and curse)

We live in an era of strategically dislocating events. On national and international levels, faith in the global economic system has been shaken to the point that even some of the free market's most ardent advocates have supported government intervention to restore faith and confidence in the system. For today's Airmen, times are similarly interesting—at seemingly every turn, challenges have appeared to long-held, previously irrefutable beliefs in the goodness of airpower and how best to employ its capabilities in the joint fight. While individually each challenge may seem somewhat tactical in nature, combined they suggest the US Air Force is at a strategic inflection point. A few examples of the airpower axioms under fire include:

- “Centralized control, decentralized execution,” a basic tenet of Air Force doctrine, faces withering fire from some military leaders who have been vocal in extolling the virtues of decentralization, particularly in irregular warfare (IW). For in IW, the distinctions—which at their essence reflect the reality that ground commanders tend to conduct scalable, bottom-up planning, whereas air components conduct planning at the operational level (e.g., at a combined air operations center), with mission planning and execution details done at lower, tactical levels—become glaringly obvious. This disconnect has led to a perception, on the one hand, of distance and lack of commitment, and on the other hand resentment at being viewed as merely an afterthought and supporting arm.
- “Effects-based approach to operations (EBAO),” an organizing principle for planning within the combined air operations center, has been essentially declared null and void in one of our key unified commands. Admittedly, the notion of “beginning with the end in mind” had been pushed in some circles to a form of science in which warfare could be perhaps viewed as a battle of mathematical formulae. But tarring all forms of EBAO with the same brush risks “throwing out

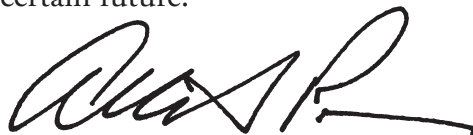
the baby with the bathwater,” at least from the viewpoint of many Airmen.

- Once the gold standard for nuclear surety, concerns have been raised about the USAF commitment to the nuclear operations business. Of note, these concerns were cited as the proximate cause for another strategically dislocating event, the simultaneous removal of the two most senior officials in the Department of the Air Force. Addressing shortcomings highlighted in various reports following the Minot and Taiwan incidents will require focus, resources, and time . . . each of which is in critically short supply.
- Despite demonstrating adaptability and flexibility across the spectrum of warfare, critics question the Air Force’s efficacy in and commitment to a future awash in irregular warfare. Airpower provides (as articulated in, among other places, AFDD 2-3, *Irregular Warfare*) an asymmetric capability for the joint force commander—our IW adversaries can battle us on the ground but are continually vulnerable to the effects that airpower can bring to bear. These adversaries have learned that the most effective counters to the advantages that our superiority in the air provides are to violate laws of armed conflict by hiding among the population and exploiting media coverage of collateral damage—both actual and contrived—attacking not our ability but our willingness to use the asymmetric capabilities that airpower brings to the fight.

The list goes on, but this suffices to provide a few examples without engaging in an exercise in self-flagellation. This too shall pass—but only with the right vision and leadership. In times like these even Airmen may need an occasional reminder of the inherent greatness in what our Air Force provides for the Department of Defense and the nation. There is a passage in Tom Ricks’ *Fiasco* in which senior US civilian leaders express incredulity that it would take a larger ground force to control a population than the force required to defeat its land forces. A large part of that answer should have been obvious—airpower, which can attack an adversary simultaneously at its tactical, operational, and strategic levels, enabled the decisive defeat of the Iraqi military despite our ground forces being numerically outnumbered.

In the end, the occasional scrutiny of “axioms of airpower” can be healthy to ensure our tenets do not become empty bumper stickers. At Air University we are proud to provide a variety of forums encouraging just such an expansion of our intellectual perspectives. These include: Symposia, *Blue Darts* (op-eds), *The Wright Stuff*, *Air and Space Power Journal* (available in six languages), and *Strategic Studies Quarterly*.

In this edition of *SSQ*, I especially commend to you Gen (ret) John Shaud’s article entitled “*In Service to the Nation . . . Air Force Research Institute Strategic Concept for 2018–2023.*” General Shaud addresses many of the strategically dislocating constructs I have mentioned in this short editorial. While it is likely no one will agree with all of the article’s points, it (and the study from which it is excerpted) provides elements of a solid strategic vision for navigating from our Air Force’s present position, through interesting times, into the uncertain future.

A handwritten signature in black ink, appearing to read 'Allen G. Peck', with a stylized flourish at the end.

ALLEN G. PECK
Lieutenant General, USAF
Commander, Air University

Transformation in the French Air Force in an Era of Change

*Général d'armée aérienne Stéphane Abrial,
chef d'état-major de l'armée de l'air*

Editor's Note: This article is a translation and expansion of an address given at "*Les défis de la Transformation pour l'armée l'air*," sponsored by the *Centre d'études stratégiques aérospatiales*, 3 June 2008.

THE FRENCH AIR FORCE, like all defense organizations, will of course take into account the changes of our military strategy reflected in the release of the White Paper of 17 June 2008.¹ By implementing the various reforms directed in that document, it will thus continue to transform.

But what exactly do we mean by *transformation*? Why employ this term when, as our history shows, the Air Force has not ceased evolving since its creation? For example, the Air Force of 1945 did not resemble in any way that of 1939. It had barely reconstituted its fleet of propeller-driven planes after the world war when it found itself passing into the jet era. At the beginning of the 1960s, it was engaged in the last colonial conflict using old, propeller-driven fighter planes; two years later, however, it fielded strategic bombers at the leading edge of technology that were designed to penetrate the densest air defenses. Its focus was on Eastern Europe and halting the anticipated waves of Soviet armored formations during the Cold War, but it was also engaged in Africa, containing the expansionist inclinations of various state and nonstate actors.

Things were never simple. We depended in 1945 on the good will of our allies for all that related to our equipment, because the French aircraft

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industry had practically disappeared in the war. To characterize the 1960s, I recommend the very instructive book by Gen Michel Forget, *From the Vampire to the Mirage: The Epic of a Generation of Fighter Pilots*, which relates how long and difficult was the process of integrating into our forces legendary planes like the Mirage IIIC. Finally, I will cite the drawdown of our major commands since the first Gulf War, which has resulted in the continual reduction in the sizes of staffs and has required our personnel to redesign their organizations and work processes continually.

I believe that the characteristic of our time is that today, unlike other periods, change now touches every field. Technological advances were certainly significant during the Cold War, but the geopolitical situation was fixed. After the Gulf War, we reconsidered our organizations by introducing the concepts of operational and organic command, but we employed the same equipment as in the 1980s, like the Transall, the Mirage F-1 and 2000, and the Jaguar. There were fields in which a certain continuity remained, in which an experiment prevailed, and in which reference marks could be transmitted.

Today everything changes, whether it is in the technical, organizational, or human domain. This is why we started this vast process we call transformation, which touches all aspects of our Air Force and which is intended to transform our capabilities to fulfill our missions in exhaustive and coherent ways. In other words, transformation is not an end in itself. It is a road which we travel that must allow us to apprehend the new strategic givens, the technological advances, and the new processes implemented in government to give to all aviators the most effective possible means of accomplishing their assigned missions.

To the great merit of the Air Force, our leaders anticipated the need for and organization like the *Centre d'études stratégiques aérospatiales (CESA)*.² We have advanced now for several years in the right direction, even if I say so myself, and the benefits of these reforms will slowly emerge on the surface. The main trends of the current transformation are well known. To face the widening of our missions while preserving our operational, technical, and psychological superiority, we must acquire general-purpose, leading-edge technologies. We must also open and simplify our structures to be able to concentrate our efforts to work in collaboration with the other actors in the defense ministry or in other government organizations taking part in one way or another to achieve our common mission.

Especially, transformation is accomplished through the constant attention of our people. The first responsibility for a military chief is to give to his men the means of carrying out the missions with which he charges them. This can involve difficult decisions. Taking into account the limited size of our budget and the need for modernizing our equipment, we can no longer maintain the generous human resource policies of the past. We must begin by reconsidering the number of aviators in the Air Force.

An image often associated with the law of diminishing returns, as described by the physiocrats in the eighteenth century, can help us better understand this approach. Imagine a field with fixed dimensions on which a farmer works. The farmer will work the ground and will draw from it the benefit of his labor. If you add another workman, the benefit will, of course, be higher. It will be the same if a third workman comes to help them, then a fourth, and so forth. Nevertheless, the time will come when, if the number of workmen present in the field is too great, productivity will decrease instead of increasing. There will not be, for example, enough tools for all; two workmen will be cultivating the same area and will obstruct each other or will not agree on the manner of proceeding. Taking into account the new strategic and managerial environment and technical projections, we find ourselves somewhat in this situation, since each individual can “cultivate” a greater piece today than yesterday.

In fact, we are surrounded today by an environment in which individual performance, put at the service of the collective, is appreciated much more than before. The progress made in communication technologies allows the transfer and dissemination of much more important data or information than before. It is easier to develop relations between partners and actors who contribute to the same goal or who can make an improvement in the service. The borders of organizations become at the same time fuzzier, since their activity can be divided, since others contribute in an essential way to achieving the result. Consequently, some tend to concentrate on their core activity and to give up tasks to service providers, while others modify or diversify their business portfolios. Thus, an automobile manufacturer will subcontract certain specialized parts to concentrate on the development of the final assembly of the models. Thus, supermarkets advertise holiday packages or propose bank credits in addition to their traditional activities.

The military is also included in this vast movement as interest in externalization of all projects testifies, as illustrated by our increasingly large

involvement in security missions. An aviator can no longer be regarded only as a combatant who takes part directly or indirectly in air warfare. As the example of the United States shows, some in Iraq, for instance, take part in the total war effort by leading missions on the ground, taking part in the protection of convoys or installations. The professional identity of each is recomposed today very quickly according to the general environment and the choices that the commander orders.

At the same time, the rise of the mean level of training and competence of individuals sustains the development of initiative and of decentralization. The personnel of today comprehend situations more easily and can work out specific solutions, starting from local recognition of the problem and general knowledge. These changes affect the roles of the chain of command, one of which could be in the future to take a more active part in the development of competencies of their subordinates and to better coordinate their various initiatives.

I believe that we touch here on the objective of transformation for our personnel. It is a question of passing from a culture in which the person in charge decided the field of freedom that would be given to subordinates with another system of values, to one in which the latter have true autonomy, thanks to which they can exploit the initiative appropriate to their level but where their chiefs have the means of limiting their freedom when considered necessary. We are of course far from this state currently. We are, in fact, in the middle of the ford, and some yield readily to their traditional reflexes by prohibiting certain actions, by constraining their subordinates a little too strictly.

Naturally, I am not in favor of promoting a “horizontal” organization; the lack of coordination would make such an organization ineffective in any case. The recent mishaps of a famous, very powerful bank point out the risks which we incur if we evolve without limits. Neither is it the time anymore for a strictly vertical model of defense organization but for us to find together the good slope, which must allow the full development of each individual and the best possible effectiveness of the Air Force.

To follow a road, to adopt a process of change, as we see, is not an easy matter to achieve. But the road is nothing if it does not lead toward a place recognized and understood by all; it hardly has interest if one does not understand where it leads. This destination, this goal, this end state must be defined specifically, with my direction, by the doctrinal concept of the Air Force.

When one speaks to me about this famous doctrinal concept of the Air Force, its tribulations in our history, especially recently, I think of Shakespeare's *Much Ado about Nothing*. Many explanations were advanced to try to explain the turmoil of the Air Force in this field. The most rigorous academic work in this area is that of Etienne de Durand and Bastien Irondele, entitled *Air Strategy Compared: France, the United States, the United Kingdom*, published in the collection of the documents of the *Centre d'Études en Sciences Sociales de la Défense*. It deserves your attention.

This document, the doctrinal concept, will initially be useful, as it specifies the missions for which the Air Force is designed. That can appear obvious, but it is not certain that everyone has exactly the same answer to this question. After all, several specialties comprise the Air Force. Some among us exploit the resources offered by the atmosphere to lead a military action, while others use the infosphere to support it. Sometimes air commandos fight valorously on the ground and ensure under extreme conditions the final guidance of precision bombs while other aviators arm themselves in the air terminals within the framework of *Vigipirate* [France's national security alert plan] missions. Which unit can perform all these missions? And how to position us compared to the other services, whose contribution is as essential as ours for our defense?

Our doctrinal concept should answer these questions and others. It will be a public document which will expose choices clearly and make it possible for all members of our organization to adopt a common vision for finally acting with the same goal. It will contribute, I hope, to maintaining the cohesion of our organization by giving the same reference marks and the same direction to each individual.

But it is more than a doctrinal concept. It is also a text placed at the disposal of observers or external decision makers which clarifies for them how an entity adapts to the mission it is given. It is also a document of communication and popularization. It presents a vision that others can acquire and compare with theirs. All can comment on it, criticize it, and take part in its evolution. This point appears essential to me. A doctrinal concept must be revisable and be discussed so that all enlightened opinions are taken into account to improve it or to adapt it to a new context. I thus hope that this text will cause debates, discussions, and positive criticisms within our organization but also in the various defense forums. Many platforms exist, each of which can be seized to put forward reactions. The review *Penser les Ailes Françaises*³ is one, but other free exchanges also exist.

The important thing is a healthy reflection. Let us look on the other side of the Atlantic, because the history of the USAF is worthy of study. Strategic air thought was strongly blocked in the beginning of the 1960s by the preeminence of the Strategic Air Command and the preparation for a future nuclear war. All plans were elaborated according to this possibility. American aviators were going to pay dearly for the very expensive choice in Vietnam of using a tool badly designed for the tactical challenges encountered there. On the other hand, reflection was encouraged after the war, and from debates on very high-quality ideas, which were going to take root throughout the American defense establishment. There were certainly failures, as in Grenada, but there would be especially a great victory in Iraq in 1991. The war was not only won in the Iraqi skies, it was also won thanks to the pens of hundreds of officers and commentators (Israeli, for example) who drew from their cultures, who wondered about the manner of fighting other armies, who shared their doubts, their experiments, and their convictions. The intellectual combat of today can thus avoid the military disappointments of tomorrow.

Our doctrinal concept must avoid, in my opinion, two principal traps. The first is our natural tendency to be too technical. We are likely in this case to be incomprehensible and to limit the diffusion of our ideas to only our institution. In addition, our propensity to consider problems mainly through a technological perspective harms us seriously. We are situated within a political scope; we are employed to achieve political ends. What we must express in a doctrinal concept is the way in which we are integrated in this political project, or failing this, how we can contribute to the realization of a political project.

The other trap that I identify at this stage is our sometimes marked tendency to want to act in an autonomous way. This is rather natural but can cause some disadvantages. A vision of the strategic use of airpower is essential. The air campaign over Kosovo proved that the military use of only the air component could, in certain specific crisis situations, be sufficient to overcome certain obstacles. This good example of air diplomacy should appear in a forthcoming work, which Mr. Coutau-Bégarie has prepared on this topic.

Another interesting case involves the Luftwaffe during the Second World War, which had adopted only one tactical and operational approach. It excelled in these fields, as its performances proved during the invasion of Russia, but it paid a steep price when unable to match the industrial war

effort of the British and Soviets and, finally, to stop the successive waves of Anglo-Saxon bombers over the territory of the Third Reich.

If I believe it is useful to think about the autonomous use of the air component in a military framework or broader policy, I am, however, convinced that this approach is not enough. We must also question ourselves on the use of the air weapon in collaboration with the other components, whether it is at the tactical, operational, or strategic level. The operations carried out every day by our units in Afghanistan point out the relevance of these modes of action. Thus, we must think of the division of labor between the services, or rather, of the integration of their actions.

If we want to further improve our performance within the framework of an air-land battle, two things will be necessary. The first will be that of reflection—to imagine the best means of collaborating, to know how to supplement the action of the other, thanks to our own capabilities. It will be essential that each service can derive benefits from the others if we want such a collaboration to be viable.

The second will be that of acculturation, because the idea is useless if not permitted to be implemented. The presence of pilots experienced in units of the Special Forces or terrestrial units could thus appreciably improve joint modes of action. They could be employed as advanced air traffic controllers and could have the role of systematically managing the air assets allocated according to the situation on the ground. They would have the expertise necessary to know what an aircraft can or cannot do. They could propose original solutions with their brothers in arms, which could perhaps integrate more easily their ideas of the contribution of operating in the third dimension. On the other hand, they would at the same time learn during their assignments the spirit and the constraints of engagements from the surface perspective.

Complementary solutions can be considered, like the systematic installation of joint command posts managing tactical-level fires through the means allocated to them. There still exists, in reflection, a freedom in which each of us can be motivated to imagine the future. Besides, other fields are largely unexplored, such as the way the Air Force could take part in the investment in exoatmospheric space, cyberspace, or the world of communication, which are all within the competence of the joint services and political authorities. The use of drones remains also a source of very stimulating ideas.

Our transformation will continue in the future, just as it has in our past. Our Air Force personnel must engage the new ideas, anticipate the requirements of the future, and find ways to improve our contribution to national security. The White Paper and our doctrinal concept represent first steps on this journey. Where they will take us depends on the dedication and creativity of our personnel. **SSQ**

Notes

1. An English translation of the Defence White Paper appears at http://www.ambafrance-uk.org/New-French-White-Paper-on-defence.html#sommaire_3.
2. The CESA Web page is at http://www.cesa.air.defense.gouv.fr/article.php?id_article=363.
3. English translations are available at http://www.cesa.air.defense.gouv.fr/rubrique.php?id_rubrique=61.

In Service to the Nation . . . Air Force Research Institute Strategic Concept for 2018–2023

John A. Shaud, General, USAF, Retired

*The mission of the United States Air Force is to fly, fight, and win . . .
in air, space, and cyberspace.*

IN THE FALL 2008 issue of *SSQ*, I wrote an editorial that outlined the challenges that I believe confront our military leaders as they develop a comprehensive strategy that would guide our contributions to solving the security problems our nation confronts. In this strategy, our leaders must balance between fulfilling military needs of the present and properly preparing the service for the future. Their strategic challenge involves presenting options that provide national leaders and operational commanders with the flexibility to gain a return on our service's investment in training, organizing, and equipping. In September 2007, the Air University commander tasked the College for Aerospace Doctrine, Research and Education, and subsequently the newly formed Air Force Research Institute (AFRI), to complete a strategy study. The study would provide an "outside-the-beltway" perspective on what the US Air Force should be about in the future; specifically, what capabilities the service should provide the nation 10 to 15 years from now—roughly 2018–2023. As the director of AFRI, it was my privilege to help shape the response.

The time frame designated for the strategy study was far enough outside the Future Years Defense Program (FYDP) to avoid some current programmatic boundaries but not so far out as to be immune to current trends. Additionally, constraining the "future" to 15 years precluded conceptions

This article is a condensed version of the "Air Force Research Institute Strategic Concept Study" available on the Air University Research Web site, <http://afri.au.af.mil/>. Gen John A. Shaud, USAF, retired, is director of the Air Force Research Institute, Maxwell AFB, Alabama. He leads an 80-person organization, which conducts independent research, outreach, and engagement to enhance national security and assure the effectiveness of the USAF providing guidance to a team of 15 operationally savvy air, space, and cyberspace power researchers, the Air University Press, and the directorate responsible for Air University research and conference support. General Shaud also supervises production of the *Strategic Studies Quarterly* and the *Air and Space Power Journal*, the latter published quarterly in six languages and distributed worldwide.

of miraculous inventions of weapons found in some war games and other future studies, while similarly constraining the geopolitical landscape.

We determined that the study's relevance would be enhanced by interviewing senior leaders inside and outside of the US Air Force. My staff conducted interviews with three-, two-, and one-star flag officers serving in the Air Force Secretariat, Air Staff, combatant commands, major Air Force commands, Air University, Air Force Reserve, Air National Guard, National Security Agency, North Atlantic Treaty Organization, and French Air Force, as well as select retired four- and three-star flag officers, military contractors, Department of Defense (DoD) civilians at the research labs and "think-tanks," interagency officials, and faculty at civilian universities. These interviews helped inform our analysis but did not restrict our thinking—or our recommendations.

We began our analysis with the understanding that every secretary and chief must simultaneously enable the service to fight a "current fight"—the current fight during their tenure—while preparing it for a future fight. The study, grounded in today's realities, proposed such a strategy—one that attempts to prepare the Air Force to meet its near-term commitments while providing vectors for future success. Some would argue that the study is too focused on the issues facing the Air Force today and not sufficiently focused on a strategic vision for the Air Force's future. This argument ignores the reality that the Air Force faces challenges today that, if not resolved in the near term, will adversely impact the 2018–2023 time frame. Further, the criticism ignores the reality that the programs the Air Force will need in 2018–2023 must originate in the near term to be available at that time. Expressed another way, today's actions set the context that will enable tomorrow's Air Force to ensure future success.

The Air Force has long struggled—along with the rest of the national security establishment—to develop an appropriate strategy for the post-Cold War era that helps shape its unique capabilities to secure the nation. Without a focus on a single adversary, consensus on a coherent strategy has been difficult to develop. This study attempted neither to reinvent the Air Force nor to protect the status quo at the expense of common sense. The intent was to understand the unique value of the service's contribution to national security and, where appropriate, offer considerations for change.

In developing a strategy, we first had to agree upon what the world would look like in 10 to 15 years. In developing the study's assumptions,

we relied principally upon *Mapping the Global Future*, the Report of the National Intelligence Council's 2020 Project. The study was thus informed and constrained by the following assumptions:

- Conventional campaign capabilities—foundational for sovereignty;
- The “Long War” and/or other irregular warfare (IW) will continue;
- The Air Force must “partner” to be successful;
- No global military peer, but at times regional peers;
- Diminished US technological lead (peers get a vote);
- WMD problem continues despite US and international organizations' efforts;
- Imbalanced population, have and have-not separation continues;
- Market/labor competition with China, India, the EU;
- DoD budget will be constrained; and
- Popular support uncertain for national security initiatives—fiscal and attitudinal.

The Strategic Framework

The fundamental starting point for any USAF strategic concept should be a framework in which the entire service sees its value and its contribution. It is interdependence within the service that is the critical missing element in current AF strategy—an Air Force seeking to operate in three interdependent domains of air, space, and cyberspace. The basic operational construct of Global Vigilance, Global Reach, and Global Power that forms the operating construct for the Air Force has its origin in the widely acclaimed Air Force white paper on *Global Reach—Global Power*, published in June 1990. That white paper framed the Air Force transition from a nuclear deterrence and forward defense posture born in the Cold War to a more flexible posture predicated on our ability to move forces and employ force anywhere on the globe, as needed. It was a powerful and enduring message for the Air Force.

Capitalizing on this successful Cold War transition document and discussion, Air Force leaders followed a similar pattern with subsequent documents on *Global Presence* (1995), *Global Engagement* (1997), and *Global Vigilance*,

Reach, Power (2000). However, by 2000, the larger message encapsulated in the connected phrase *Global Reach—Global Power* had been substantially lost. The reorganization of the service, resulting in the creation of Air Combat Command and Air Mobility Command, and the increased deployed-operations tempo of the 1990s provided a near-term focus on “mobility” and “power” and generally related those functions to specific organizations. “Global Vigilance” then became the advocacy bumper sticker for Air Force Space Command, “Global Reach” for Air Mobility Command, and “Global Power” for Air Combat Command.

Over time, the three separate AF strategy elements—vigilance, reach, and power—evolved largely into advocacy statements for specific functions within the framework of the service’s contributions to national security. Global Vigilance, Global Reach, and Global Power defined as mutually independent fall short of the full range of strategic options that the USAF can bring to the fight. The expansion into cyberspace only exaggerates this disconnect. Cross-domain integration or operations in air, space, and cyberspace should enable greater speed, precision, and reliability than those restricted to a single domain. The potential synergy represented by integrating capabilities across the domains should produce the desired effects with proportionally fewer counterproductive effects.

The service has focused, perhaps over-focused, on the systems and sustainment that can be “purchased” through programming and organization (POM) actions. However, as an organization that has adapted an effects-based mentality linked to the desired outcomes of national policies, the joint presentation of forces, and both kinetic and nonkinetic options, the Air Force needs to rebalance this focus. By “recasting” Global Vigilance, Reach, and Power with an effects-based orientation, all service functions—agile combat operations, information operations, building partnership capacity, and so forth—can integrate logically in a more cohesive strategic framework: one that focuses on the integration of air, space, and cyberspace capabilities across all domains, to include land and maritime, rather than on individual service capabilities.

The proposed redefinitions begin with recasting all three into a more inclusive vision for Air Force capabilities. *Global Vigilance* represents **situational awareness** required for understanding both the necessity for action and the character of the effects necessary to achieve a revised condition or end state. It is the underpinning element, the foundational starting point for Global Reach and Global Power. Global Vigilance depends on

Global Reach to gather data and disseminate intelligence. **Global Reach** represents the **operational access** required to provide connectivity to the objective through air, space, and cyberspace. Global Reach takes varied forms depending upon circumstances. For instance, it could be a space-based line of communication, an air route for a C-17, or a portal-to-portal Internet connection. **Global Power** represents the **ability to create and sustain effects** through air, space, and cyberspace. These effects encompass a full range of kinetic and nonkinetic, lethal and nonlethal, constructive and destructive options prosecuted through air, space, and cyberspace either individually, or more likely, *via* a synergistic, mutually supporting campaign.

With the recast Global Vigilance, Reach, and Power as the three pillars for Air Force strategy, the service must plan for and acquire systems, people, and enabling structures and processes necessary to shape, deter, fight, and win conventional campaigns (also known as major contingency operations)—foundational for US sovereignty—and to play its part in winning the Long War. Should deterrence fail for any reason, the Air Force must be prepared to engage as part of a team in winning that subsequent conflict. But the probability of conventional campaigns, given our dedication to maintaining the deterrent combatant edge, is less likely than the continuation of irregular styles of warfare characteristic of the Long War.

Fielding Regular and Irregular Capabilities

By maintaining a dominant posture for conventional campaigns, America, in essence, has shaped the environment where it will not have to fight. This does not completely rule out the potential for irrational choices or choices borne of desperation that result in a short, intense conflict. In this time frame, however, the probability is low for state-on-state, force-on-force attrition warfare challenging US sovereignty or a significant realignment of national/regional power.

Having denied our adversaries the opportunity for symmetric warfare, their only other option remains asymmetric. America's military forces are engaged globally, not just against terror, but also in a larger context, against the forces that threaten freedom, be it terrorism, drugs, or insurgencies. This asymmetric warfare is otherwise referred to as irregular warfare. However, the United States must not fight IW as an ad hoc, pick-up game but rather

as a conscious choice to achieve strategic goals that contribute to securing our national interests.

Irregular warfare requires a particular mind-set and specific talents not entirely applicable or common to more traditional styles of warfare. The relative lack of predictability and its indifferent boundaries regarding what each fight constitutes in terms of objectives and resources are troublesome characteristics well beyond the numbers involved. By definition, IW offers a weaker opponent an option against a stronger one, thereby attempting to thwart the concepts of Global Vigilance, Reach, and Power. As a result, and by design, IW is warfare in which the stronger opponent must adapt how it brings its traditional strengths to bear against an apparently weaker enemy.

The Air Force has operated with some success in the IW environment before but has lost significant capacities following drawdowns or conversions after each conflict. This should not come as a surprise, given that budgets for unused tools are a luxury not easily afforded in any era. But the extended lead time required to relearn IW when required has significantly affected the Air Force's ability to contribute early and effectively in each IW fight.

In developing an effective IW strategy, the Air Force must first change a strategic objective from successfully *waging IW to enabling a partner to fight IW*. In the absence of other alternatives, the Air Force may serve as a fighting force, but even at that point, the service should adopt the strategic mind-set that it will conduct a holding action while the supported partner builds/enhances its own capabilities. Winning strategies are conducted by, with, and through the supported partner. The *Quadrennial Defense Review Report* of 2006 provides an important framework for this discussion:

Long-duration, complex operations involving the US military, other government agencies and international partners will be waged simultaneously in multiple countries around the world, relying on a combination of direct (visible) and indirect (clandestine) approaches. . . . Maintaining a long-term, low-visibility presence in many areas of the world where US forces do not traditionally operate will be required. Building and leveraging partner capacity will also be an absolutely essential part of this approach, and the employment of surrogates will be a necessary method for achieving many goals.¹

For the Air Force to become effective in IW, it should acknowledge the necessity of fulfilling two sometimes competing missions. First, and in the absence of alternatives, the service should have full capability to engage an asymmetric enemy directly—to fight IW engagements as a key component of the national effort. This will inevitably occur in a joint, interagency, and

coalition-based context. Second, our Air Force's fundamental job within most IW scenarios is to help establish a credible host-nation air force. The Air Force should have the capacity to create within a partner nation the requisite skills and disciplines in airpower that enable partners to realize their national goals without the large footprint or heavy hand of a US military presence.

Today, that transfer/training capability exists on a permanent basis in only one relatively small squadron: the 6th Special Operations Squadron in Air Force Special Operations Command (AFSOC). The 6th SOS certainly has the talent but lacks the mass required for engagement and persistence across the breadth of areas affected by the Long War. The Air Force's general-purpose forces have the necessary mass, and with the appropriate force-development programs, can have the requisite talent as well.

The Air Force should meet the challenge by shaping its force for a winning strategy in the Long War that will enable Airmen to *assess*, organize, train, equip, *assist*, and *advise* foreign air forces for success against irregular adversaries. However, with increasing acquisition costs highlighted by recapitalization challenges, fielding the numbers of aircraft required to support all theaters is problematic. Future budget constraints will place aircraft, space, and the cyberspace systems acquisition at risk—not to mention the personnel necessary to support future conventional campaigns. What is required, then, is a “right-tech” solution that meets both immediate Air Force IW requirements and provides enhanced capabilities for partnering with host air services. This is not a “low-tech” alternative but rather providing the right technological solution appropriate for the situation. For example, it will be years before the Iraqi and Afghani air forces are prepared to support even the most basic jet aircraft (e.g., the F-16), and even then it might not be the best platform for their purposes.

The Air Force must consider procuring aircraft specifically designed for IW operations to augment and balance the current force—the same aircraft that best augment and balance a partner's force. New, highly capable right-tech aircraft, to include intratheater transport aircraft, operating beneath the top cover of air superiority, can be acquired at lower cost and in greater numbers than more expensive state-of-the-art aircraft. These new right-tech aircraft also provide opportunities for platforms that can be assimilated by host-nation forces, creating capacity where none may have existed before. This fundamental of IW strategy will enable partnering for

decades through bilateral agreements as the United States provides logistical and advisory support at levels as desired and appropriate for both nations.

Building partnership capacity is not a particularly novel idea. Many coalitions and alliances have formed around similar concepts; for example, the North Atlantic Treaty Organization “interoperability” initiatives provided essentially the same effect. Within the proper context this approach not only extends military tactical and operational proficiency but also contributes when the strategic goals include building and developing a partner-nation’s central-government legitimacy and credibility.

Such an enabling strategy produces the immediate benefit of significantly reducing the profile of Americans in contested areas. As seen recently in Iraq, and repeatedly in history, large-power footprints can become a significant rallying factor for disparate, antigovernment groups—the very definition of insurgency. Even groups that would never work together in normal circumstances have formed temporary alliances to eject outsiders. Rather than helping the central government, a large US footprint can become a force multiplier for insurgent recruiting and propaganda. An enabling strategy with the proper emphasis on *by, with, and through* the central government diminishes the risk of the US footprint working against it.

If the nation chooses to engage in IW, the Air Force must be prepared to field forces to wage war effectively in this arena. Thus, its force-development system should produce people qualified for IW as well as more traditional styles of conflict. Force development is a balance of three core efforts—education, training, and experience—designed to ensure that the Air Force has qualified people in place at the right time to fulfill the assigned missions. The Air Force cannot confine IW to a single specialty or set of specialties. Force development for IW, thus, should engage widely across the conventional Air Force.

There are several suggested opportunities for innovation within this environment. For example, F-22 pilots will conduct much of their training in simulators due to that aircraft’s complex and multifaceted capabilities. With a companion trainer aircraft available for wider application, pilots could be operationally ready to fulfill multiple missions. Such a dual qualification system would provide airmanship and growth for the crews at much lower flight-hour costs. Additionally, if the companion aircraft were IW suitable—for example, ISR, light attack, battlefield mobility—a ready reserve for IW could become available, to include availability in phase IV of a conventional campaign.

Solutions in IW must be based on flexibility to address the unique local circumstances of each conflict where resolutions are largely generated from political rather than military initiatives. As a part of the joint team, the Air Force will likely find its forces reporting to a joint task force (JTF) commander where ground units will be operating simultaneously in multiple dispersed areas. In most geographic commands, the Air Force has one air operations center (AOC) to support the entire area of responsibility where the Air Force has consolidated the majority of its expertise—air, space, and cyberspace.

When a JTF is created in theater, the Air Force is not currently positioned to send a joint force air component commander (JFACC) supported by an AOC to that JTF. In an attempt to create a presence, the Air Force has chosen to assign an air component coordination element (ACCE) to JTFs. While an ACCE provides air expertise at the JTF level, it is by design not involved in the formal planning process, neither with the JTF nor the AOC. The end result is that JTF staffs do not have adequate airpower planning expertise or the organizational “hooks” into the formal joint air operations planning process within the AOC. This situation is magnified if multiple JTFs are created within a combatant command.

As US Army doctrine evolves, planning is taking place at lower and lower command levels to take advantage of individual and small-unit initiatives. The Army’s planning construct, thus, finds Airmen at the end of the planning process, not at the beginning where they can be most effective. For effective operations, the Air Force must have planning expertise at the brigade level and below. This means that while centralized control remains paramount to retaining theater-wide effectiveness, to effectively integrate Air Force capabilities with joint operations at the JTF level and to inform air and ground planning at the earliest stages, the Air Force should move to a distributed planning model to maintain effective centralized control. Distributed planning allows the Air Force to place experts with the appropriate planning tools at the locations where operational plans are born and refined, allowing meaningful prioritization—all of which enable effective centralized control.

To address the air and ground integration challenges below the JTF level, the Air Force must also attend to force development. This will require establishing units that are organized, trained, and equipped to conduct distributed planning. The Air Force can leverage the recently established air ground operations wing at Moody AFB, Georgia, to cre-

ate this organization. By developing subordinate group- and squadron-size structures, the Air Force would create organizations that could align to the US Army division, brigade, and battalion levels. The proper force development model would also allow the Air Force to surge personnel from the AOC and, conversely, reclaim them when the need arises.

The Total Force

Since 1990, global conflicts have demanded a continual commitment from the active duty and Total Force. The Air National Guard (ANG) and Air Force Reserve (AFR) “Citizen-Airman” is the Air Force’s closest link to the American people. However, constant overseas deployments have strained the bonds between the two. An unintended consequence of such a high operations tempo is that it has transformed the “Citizen-Airman” into the “Airman-Citizen.” To help return the balance, the Guard’s primary mission can become homeland defense. The American people expect their military to respond to any national disaster, man-made or natural, and the ANG is exceptionally well positioned to do just that.

The inclusion of the homeland defense mission is not new to the ANG. It has long been a central part of the air capability under the auspices of the North American Aerospace Defense Command. However, the nation must look to broaden the ANG’s and the AFR’s mission in the post-9/11 era. This can best be accomplished by making select Guard and Reserve units dual capable in at least two mission sets—war fighting and peacetime disaster relief.

An obvious area to begin is with medical personnel and MEDEVAC, where assets have clear dual capability—during a disaster at home and in combat operations when deployed. Existing ANG medical units will require modification to their existing Designed Operational Capability (DOC) statements designating them to perform disaster relief missions. The revised DOC would provide for unique first-response medical needs beyond the typical emergency medical specialties. For example, the Air Force should stress physician certification within the ANG that encompasses all phases of disaster medical delivery—a natural complement to existing unit medical capabilities and psychiatric specialists. Dual-capable units could provide exceptional capabilities at home and during phase IV operations following any conflict.

As current equipment is programmed for retirement in the out years, selected ANG units should be reequipped with dual-capable—for example, IW, conventional campaign, and homeland defense—platforms and be assigned DOCs allowing for use in multiple mission areas. For instance, where ANG units are retiring F-16s, select units could have those platforms replaced by cargo aircraft and other airframes consistent with the homeland defense mission. Thus, DOCs for rescue and airlift could be added for both the ANG and AFR units. This is not to cede the Air Guard and Reserve's fighter mission completely—there will always remain a need for their combat capabilities to meet current operations and any postulated conventional campaign—but rather to review their existing capabilities.

The Nuclear Mission

While IW and homeland defense are critical issues facing the United States, strategic deterrence and national sovereignty remain pressing concerns. Nations, including China, North Korea, Iran, and a multitude of others, continue to pursue nuclear weapons programs and nuclear modernization. During the Cold War, nuclear deterrence was the nation's top priority. Since the end of the Cold War, the United States has struggled with nuclear deterrence as a strategic concept. The recent series of national military strategies has shifted the nuclear issue from that of deterrence to one limiting the proliferation of weapons of mass destruction and downsizing the numbers of nuclear assets.

Numerous options exist to address the Air Force's nuclear surety responsibilities. They range from recommendations to create an organization responsible for overseeing nuclear issues to a complete reorganization of the Air Force around the nuclear mission. Building upon the Air Force's exceptional record through the Cold War, it seems critical for future success to ensure that any organizational remedy be as simple as possible so that even the youngest Airman knows who has command authority for USAF nuclear assets. Accordingly, the most direct organizational solution requires that the Air Force consolidate all nuclear assets under a separate major command, accountable to the chief of staff for organizing, training, and equipping functions, while serving as the force provider to US Strategic Command. One numbered air force for bombers and one for ICBMs would work to ensure a focus on nuclear weapons and improved "checklist discipline." This is not a proposal to "bring back SAC." While

memories of Strategic Air Command warm the hearts of many a Cold Warrior, a SAC construct would not meet the requirements demanded of a twenty-first-century air force. This new command would provide an advocate within the Air Force for its strategic mission and be responsible for organizing, training, and equipping the Air Force's strategic force. This new command might well include space-based assets and, at some point in the future, offensive cyberspace capabilities.

Organizational change alone will not address deeper problems. The larger issue is about leadership and instilling a culture where officers and senior noncommissioned officers will step up immediately to take charge to apply discipline and correction where needed to assure compliance. Leadership has two essential elements—*the mission*, objective, or task to be accomplished, and *the people* who accomplish it. All facets of leadership must support these two basic elements. Effective leadership transforms human potential into effective performance in the present and prepares capable leaders for the future. A leader must never forget that people perform the mission.

Former Air Force chief of staff, Gen Ronald R. Fogleman, once said, “To become successful leaders, we must first learn that no matter how good the technology or how shiny the equipment, people-to-people relations get things done in our organizations. People are the key or fundamental assets that determine our success or failure. If you are to be a good leader, you have to cultivate your skills in the arena of personal relations.” The success of nuclear surety and deterrence is dependent on success at the critical junctures in leadership. These critical junctures are at the *officer-to-senior-NCO* level and the *senior-NCO-to-junior-Airman* level.

Human behavior will drive some to attempt to find the “easy way.” The Air Force core values form the bedrock of leadership in the Air Force. The core values are a statement of those institutional values and principles of conduct that provide the moral framework within which military activities take place. The three fundamental and enduring values of integrity, service, and excellence require personal focus—one that is face-to-face and directly influences human behavior and values. Successful leaders tailor their behaviors toward their fellow Airmen's needs for motivation, achievement, and sense of belonging, recognition, self-esteem, and control over their lives. Leaders foster growth by insisting that their people focus attention on the aspects of a situation or mission they control. Where Airmen assume away

the responsibilities of leadership, compliance with established procedures and accountability are dramatically impacted.

Nuclear deterrence remains critical to our nation's defense, particularly in light of a resurgent Russia, China adding to its nuclear force, and the posturing of nations like North Korea and Iran. Nuclear deterrence provides the overarching umbrella to national security not offered by any other weapon system. The question with an aging fleet then becomes What does the Air Force do next? Does the nation relinquish the land-based intercontinental ballistic missile (ICBM) force and rely upon its strategic bombers and ballistic-missile submarines for nuclear defense, or, at some point, does it fund modernization of the land-based force?

America constructed the current ICBM command and control structures—launch control centers (LCC) and launch facilities (LF)—during the 1960s. These underground structures that house the crews, equipment, and launch facilities are vulnerable to direct nuclear strike and are subject to environmental pressures, such as underground streams and shifting ground. Ongoing modernization and upgrade programs will allow the existing missiles, warheads, and command and control systems to remain operational through the 2023 time frame, notionally to 2030, but how far beyond that remains unclear.

A significant part of the nation's nuclear surety issue is its aging ICBM force, which it relies upon for strategic defense. At its height, the United States had 1,500 land-based ICBMs. With the closing of the 564th Missile Squadron in Montana, that number is reduced to 450, most of which are single-warhead missiles. If the nation is to go below 450, any new number should be a function of US national policy and should be based upon a reasoned threat analysis. Therefore, we recommend a threat study that would take into account deterrence against rogue-nation attack and future near-peer competitors.

Support for nuclear modernization is problematic. From the public's perspective, ICBMs do not protect the nation from terrorists and have little or no role in the global war on terrorism—much less in Iraq or Afghanistan. Many believe ICBMs will never be used due to the horror of nuclear weapons. Therefore, eliminating one leg of the triad would save money needed for other pressing requirements while at the same time not impeding the nation's progress as it fights the Long War. However, the elimination of the ICBM force would dramatically ease the targeting options for any potential adversary.

At some point, the nation will be faced with the decision to retire or modernize the current ICBM fleet. If it were to eliminate ICBMs it would then be forced to rely upon the remaining two legs—strategic bombers and ballistic missile submarines. The recent Blue Ribbon review of nuclear security commissioned by Secretary of Defense Robert Gates found that “without an alert commitment for 17 years . . . the bomber force has seen a dramatic atrophy of its nuclear operational and academic skills set.” Thus, without returning to the Cold War strategy of bombers on alert, the preponderance of reliance and risk then moves to the submarine force, essentially requiring the United States to rely upon a single nuclear system. If a technical fault were to “ground” that system, the United States would be without a viable nuclear deterrent.

The nuclear triad has served America well for over 60 years. The rationale for its existence continues today and will into the future. As horrific as 9/11 was, it did not place the nation’s survival at risk; only a nation with strategic nuclear delivery capacity can do so. The October 1998 Defense Science Board Task Force on Nuclear Deterrence concluded that “significant numbers of ICBMs deny any adversary the benefit of a limited attack. Without the ICBMs, surprise attacks against a handful of bomber bases and sea-launched ballistic missile (SLBM) facilities, with plausible deniability, could drastically alter the correlation of forces.” Thus, the pressures that exist to eliminate land-based ICBMs are not founded on deterrence or national defense but rather on funding and public perceptions of the utility of nuclear weapons.

Continued reliance on a triad reduces risk and enhances national security through nuclear deterrence. Accordingly, what is required is a sustainable and affordable ICBM modernization program. The first step in creating such a system is upgrading ICBMs with a modern command and control structure. To address the aging, nonsurvivable launch control centers, the Air Force should consider moving the equipment and crews above ground. This move will reduce lifecycle costs (ease of maintenance) while taking advantage of the latest technologies in communication. Vulnerability increases somewhat, making this more of a soft target, but through redundancy, much of the vulnerability can be mitigated. The next step in creating a sustainable force is equally important: modernization of the launch system.

The new launch system should be based on a family of vehicles, one also used for commercial space lift or for wider military application. A missile with wider application allows R&D costs to be spread over a larger number

of vehicles while at the same time reducing maintenance costs by using common hardware. As with command and control facilities, the Air Force should consider returning the new launchers above ground. Essentially the same rationale exists for moving launchers as it does for command and control: reduced lifecycle costs. Again, vulnerability increases somewhat but can be mitigated through leveraging technical means, such as remote surveillance. This concept is not a new proposal, as the Air Force has researched above-ground launchers before—specifically, during the 1970s and 1980s with “rail-garrison.”

Acquisition Reform

Ensuring national sovereignty through nuclear deterrence is only one part of a more complex puzzle. Historians have postulated that the twentieth century was an era of air and space and that American dominance derived from its ability to exploit both. To date, the twenty-first century appears to be one of information and communication. Nations such as India, China, and Indonesia seem to be reaping the benefits of understanding a new domain, that of cyberspace. To retain America’s technological lead well into the twenty-first century, the nation, and more specifically the Air Force, must reinvigorate an acquisition process that was designed during the postindustrial age, an era that allowed for a 15-year cycle for systems acquisition. Today’s era of rapid change and mass information does not allow the United States to remain a world leader in advanced technology unless it increases the pace and reduces the costs involved in the acquisition process.

Most would acknowledge that the DoD acquisition process requires reform. This is not a case where the entire system need be reinvented but rather redirected. In sum the acquisition process has produced numerous successes over the past 50 years. It has enabled the Air Force to sustain a vast technological lead over its nearest competitors in air, space, and cyberspace. It has fielded such marvels as the world’s most capable fighter in the F-22A and space launch vehicles, such as the Atlas V and Delta IV, that will assure US access to space for decades to come. These programs, however, come at significant cost. In a time of budget constraints, acquisition reform must occur to ensure the process becomes more efficient, effective, and responsive to guarantee that the Air Force remains the world’s preeminent air force.

Some would argue that the acquisition process is too complex for the Air Force to affect; that it is driven by Congress and the DoD. The service

does, however, control systems' requirements and program management. Accordingly, the Air Force must first invest in the right people with appropriate scientific, engineering, and program management expertise. Acquisition is a highly technical arena, and the Air Force is best served by those who have the prerequisite backgrounds to understand the complexity of leading-edge systems. Next, the Air Force must ensure the stability of program manager tour lengths to enhance oversight and accountability. Longevity provides familiarity; personnel with greater technical expertise, staying in place for longer periods of time with the opportunity for career progression, lend stability to the acquisition process. Additionally, Air Force personnel—either uniformed or civilian—must perform the preponderance of program oversight, review, and continuity. Contractors providing oversight of other contractors place stress on the system and potentially bring into question the integrity of the entire acquisition and development process; clearly the Air Force faces this concern today.

Further, the Air Force must look to “right-tech” solutions to simplify the acquisition puzzle. Right-tech need not mean reduced capabilities or “low-tech.” A right-tech solution means acquiring the appropriate technological solution for a given requirement. For example, while a single satellite may be less capable than one it replaces, networking less-expensive, less-complex satellites together could result in a more capable and resilient constellation at reduced costs and in less time. Former Secretary of the Air Force, Edward “Pete” Aldridge, once said that the United States launched new, one-of-a-kind Lamborghinis into space while the Soviets launched tried-and-true Chevys. Both accomplished similar missions but at dramatically different costs with a corresponding operational responsiveness—the Soviets could launch on demand; the United States could not.

While system designs may start small, by the time they reach production they have grown in size, complexity, and cost—further complicating acquisition. To solve this problem, the Air Force must improve its requirements definition process and establish clear guidelines that restrict introducing modifications once system development has begun. Certainly, when developing leading-edge systems, it is often difficult to identify all possibilities, but at some point a decision must be reached to move forward—development must become a stable process. The next generation systems are better served by development with the A model followed by B, C, and D models rather than producing the E design as the first available. By adopting a strategy of standardization and an accompanied block

approach to systems acquisition across all three domains, the Air Force can reduce costs and shorten production times, making it possible to take greater advantage of existing technologies. Incremental development allows systems to mature, reducing the need for modifications after system development has begun.

During the 1980s, more than 20 contractors competed for most defense contracts. Today the DoD relies principally on fewer than 10 main contractors. Programs have grown so complex and costly that often the remaining contractors must team to share costs. New technologies give birth to new start-up companies, but these new companies are often merged in cash buyouts or stock swaps. However, certain Air Force systems—such as computer chips and national asset satellite subsystems—are too critical to the nation's defense to allow international competition. To ensure these select components are both available for military use and are reliable (e.g., virus free), domestic development of state-of-the-art manufacturing designed for the most sensitive systems and subsystems is critical. Further, the Air Force must initiate protocols for global partnering that enable a greater degree of oversight and ensure quality control. The marketplace is international, and without proper precautions and safeguards, the Air Force could find itself disadvantaged by inferior craftsmanship or sub-standard quality control.

Taken together, the aforementioned reforms will reduce both the acquisition cycle and overall program costs. The United States has not lost its technological advantage; however, the gap between it and the rest of the world is shrinking rapidly. To maintain its technological edge, which is the Air Force's combat advantage, the emphasis must be on both the people who provide the scientific and engineering knowledge and on the acquisition process itself that provides a timely return on investment for the American public. The Air Force must pay close attention to these tasks, or it risks being overtaken by its competitors. As baseball great Satchel Paige once said, "Don't look back, someone might be gaining on you."

America's Vulnerability in Space

While ICBMs serve as the backbone of US land-based strategic deterrence, the nation's use of space ensures its international presence. As a unique operating medium, space and military assets in space provide perspective, enabling awareness and responsiveness unconstrained by national

boundaries. As “the ultimate high ground,” space truly provides a unique arena for conducting Global Vigilance. To understand space, though, one must first know where and what it is. Space is identified by international treaty as starting at 65,000 feet. It extends upward in all directions from Earth’s surface; thus, it is a global common or domain. Operational space consists principally of near space—also known as high altitude—and low and high Earth orbit. While the definitions are not precise, near Earth starts at 65,000 feet, low Earth ranges from about 100 to 1,240 miles, and high Earth orbit generally means geostationary orbit, approximately 22,240 miles up. Near Earth has eddies and wind currents and is capable of sustaining high-altitude balloons. Low Earth orbit is where most satellites and the space shuttle operate, and high orbit, or geostationary, is where the capability exists to position a satellite over a specific area on Earth and keep it geographically stationary.

America established its preeminence in space during the Cold War. It was both necessary for national security and an extension of national pride. Today, no one questions the importance of space operations as an integral part of American national security. In the past 15 years, reliance on space has grown exponentially. Global positioning system (GPS) receivers are commonplace in many of today’s vehicles, commercial banking is dependent upon satellite communications, and both land-based and satellite cable television receivers rely upon space-based assets. Military reliance is no less dramatic, as satellites provide the technological infrastructure that enables today’s precision strike and superiority of the battlespace. However, the US reliance on space capabilities has also created a vulnerability—thus, a likely target for potential adversaries. The recent launch of the Defense Satellite Communication System (DSCS) follow-on, Wideband Global System (WGS), is an example of this paradox. While each WGS satellite is more capable than the entire DSCS satellite constellation, the planned six-satellite WGS constellation increases US space vulnerabilities by placing greater reliance upon a reduced number of satellites.

The nation’s vulnerabilities in space are no more apparent than in the area of assured access to space—a national priority. Presently the United States has limited ability either to protect its space assets or deny the actions of others in space. As more nations field space systems, to include antisatellite technologies, space superiority cannot be assured. Existing vulnerabilities in space could drive a strategy that would lead the United States to place weapons in space—a move that would clearly spark an

arms race. A less volatile and potentially more successful strategy for the 2018–2023 time frame exists; that is, using the entire spectrum of diplomatic, information, military, and economic capabilities to develop a *defense-in-depth* construct for US space operations.

In developing space defense in depth, the Air Force must take the lead in engaging the international community to the fullest extent to create a system of protocols and relationships that encourages beneficial and benign behavior in space. Through economic and technical cooperation, nations become interdependent and much less likely to act against their own interests. America already partners widely with the international community; for example, in such areas as the international space station and space launch—both Russia and China have launched satellites for US-based corporations—and to avoid frequency overlap in the deployment of Galileo, a European version of GPS.

Partnering also lays the foundation for international negotiation, regulation, and governance by the rule of law—powerful concepts appreciated by our allies. Currently, the United States is party to a series of international regulations across land, sea, air, and space. A new round of international agreements could call for the elimination of all weapons in space, which many nations may well find attractive. Precedent exists to regulate space activity through international negotiation and regulation. Following a successful US space-based nuclear weapons test during the early 1960s, the international arena—with US support—moved to ban such weapons in space.

Pres. Ronald Reagan once said, “Trust, but verify.” In space this is problematic, for without situational awareness, it is difficult to do either. Currently, adversaries could alter a satellite’s orbit by a few degrees, and it might take days or weeks to reacquire. Additionally, microsattellites are becoming an increasing reality, and the United States has little or no ability to track objects that small. The Air Force has taken positive steps to correct that deficiency with the launch in FY09 of the first space-based surveillance system (SBSS), Pathfinder, in an attempt to improve space situational awareness (SSA) of geosynchronous orbiting objects. However, the Air Force must also field a space constellation designed to detect objects in low Earth orbit and integrate space, ground, and maritime systems into a coherent detection architecture. Only with a robust system observing both low and high Earth orbits will the United States

be capable of providing comprehensive SSA—an essential element for ensuring true space superiority.

Another essential element to space control is access to the domain. The Air Force has a rich history as a significant participant in the nation's race to space. It does not, however, have a record of responsive launch. Special handling requirements for lift vehicles and satellites require months or years of planning for any on-time launch. Space systems must become more responsive to support the needs of war-fighting commanders. This can best be accomplished through the concept known as operationally responsive space (ORS). Undersecretary of the Air Force Peter B. Teets defined ORS as a means “to create a more responsive, reliable, and affordable lift family capable of fulfilling both current and future launch requirements, and the corresponding responsive and affordable satellites.”²

The primary space-launch vehicles in use by the Air Force today are known as evolved expendable launch vehicles (EELV)—the Delta IV and Atlas V families of boosters. These two lift families will continue to be the primary medium and heavy lifters beyond 2023. Becoming operational in 2002 at about \$100 million per vehicle, the EELV was designed to standardize and improve space-launch operability, reduce the government's traditional involvement in launch processing, and save a projected \$6 billion in launch costs between 2002 and 2020.

In 2006 a congressionally mandated national security space-launch requirements panel addressing DoD lift concluded that “ample evidence suggests that these rockets [Delta IV and Atlas V] can meet the NSS [National Security Strategy] launch needs of the United States through 2020 (the end of the [panel's] study period), barring the emergence of payload requirements that exceed their design lift capability.” The report noted, however, that the two launch families were “largely uncompetitive in today's commercial market,” and that because ORS concepts were in the formative stages “it was premature to specify launcher requirements.”³ The Air Force objective must be lower cost with responsiveness marked by days and weeks rather than months and years. Less-expensive lifters and satellites that are also operationally responsive must become commonplace in the Air Force inventory.

What is required is a second space-launch modernization study similar to the one in 1995 that produced the requirements for the EELV. This new study would identify the requirements for ORS, bringing divergent Air Force lift and satellite programs together, and focus on light-to-medium *vice*

medium-to-heavy lift. The Air Force must step up to this challenge or it will remain mired in the construct of vulnerable, expensive, one-of-a-kind systems. Only when requirements are established will ORS move from a test program to an operational concept.

To further mitigate vulnerability in space, the United States must also instill greater resiliency in its satellite constellations. This can be accomplished by networking a larger number of satellites together, having spares on orbit, and/or being able to rapidly replace lost assets. The construct is to eliminate any incentive for destroying US space-based assets. If an adversary negates the use of one or more satellites, responsive launch and the ability to rapidly reconstitute capabilities enable the nation to negate its vulnerability. Further, by networking potentially less-complex satellites together, as is done today with computers, operational capability can be enhanced. The nation will always require large and correspondingly more-complex satellites, especially in geostationary orbit. However, what is needed is a mix of both systems to increase capability and simultaneously reduce vulnerability.

The Air Force has one significant gap in its exploitation of space, that being near space—known to some as high altitude. Near space is the region sandwiched between 65,000 feet altitude and the lower limits of low Earth orbit. In this region the air is too thin to support flight by most aircraft, and gravity is too strong for satellites to sustain orbit. Near space provides an arena to further Global Vigilance through theater-wide surveillance and Global Reach *via* new technologies that deliver alternative and potentially more-flexible new lines of communications for theater battlefields.

Former CSAF Gen John Jumper stated that near space vehicles would be an inexpensive substitute “for a low orbiting satellite constellation that would probably have 40 or 50 satellites.” The Defense Advanced Research Projects Agency (DARPA) and the Air Force Space Command (AFSPC) have both successfully tested vehicles in near space—DARPA using a “flying wing” and AFSPC high-altitude balloons. The goal of exploiting this arena is to provide greater capability for the war fighter at a substantially reduced cost.

The expectation is that if the Air Force could build a near-space vehicle to hover over a point at an altitude of about 23 miles, it could remain on station for months—far longer than unmanned aerial systems and approaching the mission duration of some satellites—at a greatly reduced cost. Recently, operational enthusiasm for near space has waned. Despite that, leaders should commit now to the use of near space to ensure operational

control of a cost-effective medium for capitalization in the 2018–2023 time frame. Ultimately, near space is awaiting utilization across its entire spectrum with the potential for great return on limited investment.

Cyberspace—A Contested Domain

Moving from space to the third Air Force operational domain, cyberspace, the Air Force again faces numerous challenges. During the earliest days of the computer revolution, cyberspace was largely viewed as a benign, undefined region whose main use was for e-mail and a playground for adolescents and twenty-somethings living in the basement of their parents' houses. By contrast, rapid growth in the popularity of the personal computer and the increased availability of the Internet have generated a new war-fighting domain: cyberspace.

Today, cyberspace binds the international community together, empowering governments and individuals in ways unimaginable only a few years earlier. Cyberspace permeates nearly every aspect of our daily lives to the point where society depends on the use of information technology networks. However, as with space, our reliance on cyberspace has turned a technological advantage into a vulnerability, one adversaries seek to exploit. The challenge, then, is how best to use the medium while simultaneously protecting US national interests from attack across this new domain.

In his 1982 novel, *Burning Chrome*, William Gibson coined the term *cyberspace*. He defined it as “a graphic representation of data abstracted from banks of every computer in the human system.” From this fictional beginning, the world would grasp the concept of a real, separate, distinct, and identifiable realm. In 2008, the DoD defined cyberspace as “a global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.”⁴ DoD senior scientist, Dr. Kamal Jabbour, has described cyberspace in military terms as “a domain in which signals hold at risk intelligent systems.” As such, cyberspace enables Global Reach—not to mention Global Power and Global Vigilance—through a modern line of communication that connects the other domains with physical infrastructure and the cognitive processes that use the data that is stored, modified, or exchanged.

Cyberspace's distinct characteristics immediately identify it as unique from the other war-fighting domains of land, sea, air, and space. The characteristics are the low cost of entry—anyone with a computer and an Internet connection can launch attacks against global US interests; anonymity of one's action; and uncertain governmental jurisdiction due to international cross-border implications. Threats come from traditional and nontraditional sources, including hackers in search of fame or personal gratification, criminals seeking profit, terrorists looking for ideological gain, and nation-states in quest of political and/or military advantage. At the same time, cyberspace provides the ability to deliver precise effects that enable technologies and tactics to operate simultaneously across a broad range of targets, unconstrained by location or time.

Cyberspace is also distinct from the information that may reside in or be transferred through it. If not properly understood, the Air Force, in attempting to protect information, might err in focusing on the content rather than on the domain itself. A maritime analogy would be the equivalent of guarding the goods onboard a ship rather than patrolling the shipping lanes. Accordingly, the Air Force must not focus solely on protecting its databases, but rather it must also protect its networks and the functioning of electronic devices to enable cyberspace control.

Establishing control over cyberspace does not mean having exclusive use of the domain, nor does it mean that the Air Force is interested in defending all of it. Instead, as with air superiority, control of cyberspace means securing access to certain portions of the domain as needed to conduct desired activities across all domains. Accordingly, the Air Force must be prepared to conduct warfare in cyberspace in order to secure the domain at the time and place of its choosing.

Before the Air Force can function effectively in cyberspace, it must first resolve the issue of jurisdiction, thereby determining the difference between a crime and an act of war. This is not as simple as it might sound. The *Posse Comitatus Act* generally prohibits DoD personnel from taking law enforcement actions against US citizens, which prompts certain questions. When an attack occurs, is it from inside or outside of the United States? Is it by a US citizen or a foreign national? Is it by a group of unaffiliated private citizens, or is it state sponsored? Where does the Federal Bureau of Investigation's (FBI) or National Security Agency's (NSA) authority begin in relation to that of the Air Force? The answer to these questions will drive

jurisdictional decisions and provide the authority for the Air Force to take offensive or counteroffensive cyber actions.

The Air Force must take an aggressive approach to determine jurisdictional responsibly. Accordingly, the Air Force should work toward an interagency commission that will resolve the issues of jurisdictional authority and, if needed, advocate for Congress to revise Title 10 laws and policies. Without resolving this issue, it will become increasingly difficult to ensure the required operational control of the domain for national defense.

Understanding cyberspace as a war-fighting domain requires focusing on the medium as it relates to military operations and national security. The ability of individuals or states to “hack the system” or “spam the network,” resulting in denial of service or corrupted databases, will increase over the next 10 to 15 years. Accordingly, while offense offers a distinct advantage for airpower, in cyberspace deterrence and defense must become co-equal propositions. When attacks can come from all directions at any time, defense becomes paramount.

The Air Force, and consequently the DoD, must move to a truly closed network, one that does not allow interaction with other open systems. By moving to a closed network, the potential for external contamination or external attack from hacking or spamming is mitigated. The Air Force must also defend its critical databases from attack, but firewalls, like castle walls, provide a false security while trapping their residents inside. Rather than seeing Air Force bases as individual entities working in cyberspace, the Air Force must view cyberspace holistically, developing organizations and tactics to defend regardless of location while retaining freedom of action for the nation.

The Air Force must additionally develop resiliency in its systems, where a layered defense in depth reacts to threats and sets in motion procedures for post-attack recovery. Much like the construction of battleships of the early twentieth century, the ability to sustain a direct hit and continue fighting will be paramount. This will mean developing and fielding self-diagnosing and self-healing systems with adequate redundant capacity for survivability. The impetus here is to remove any incentive for an attack. If the effort far exceeds the reward, attacks are further deterred.

Conducting offensive and defensive cyberspace operations will require an increased degree of automation. Cyber operations occur in the compressed time of milliseconds, a pace that demands automating the defensive measures of threat detection, classification, course-of-action selection, and

response. Intelligent systems must be able to react rapidly; instantaneously differentiating between inquiry and attack, communicating resolve or offensive operational intentions to deter the attacker. Further, databases must employ stealth methodologies where, for example, modulating chip technology enables them to hide, morph, and masquerade as effectively as any attacking agent.

If deterrence fails, the Air Force must have the ability to conduct counter cyberspace operations across the entire grid to disable and defeat the attacker's capabilities—returning fire when necessary based on established rules of engagement. Through counter cyberspace operations, the Air Force deters future actions and removes the aggressor's motivation, be it an individual or a nation-state. Without a return on the investment of time and effort, attacks are mitigated, and cyberspace superiority, like air superiority, becomes achievable.

To respond effectively, the Air Force must first know that an attack is taking place, thus counter cyber operations will require generating and maintaining cyberspace situational awareness. Attacks against US systems will likely begin by probing and querying to determine weaknesses and our likely response. Defeating a cyber attack will, then, necessitate internal and external early warning systems, much like the ICBM launch-detection network. Systems residing outside the firewall will identify anomalies, rapidly analyzing an attacker's "forensic fingerprints" to predict future behavior and communicate viable options through reach-back capabilities to avoid the threat.

As an operational career field, cyberwarriors must be part of a highly structured professional development program. An initial weapon system qualification school, similar to undergraduate pilot training (UPT) or undergraduate space and missile training (USMT), must exist. This undergraduate cyberspace training (UCT) school will provide the needed finishing military education required for newly minted second lieutenants. It must be as exacting as a UPT, where the Air Force anticipates a substantial number of washouts as students progress through a highly demanding and rigorous program. The new school would focus on the fundamentals of cyberspace control and operations, furthering student understanding of cyberspace superiority and cyber counter operations.

Following UCT completion, cyber professionals should anticipate a career-long continuing education process. A schoolhouse similar to the National Space Studies Institute in Colorado Springs is required where

100-, 200-, and 300-level courses are available for officers as they progress in rank and responsibility. The courses at the National Cyberspace Studies Institute (NCSI) would provide an increased understanding of cyberspace operations appropriate for success at the advanced ranks. Attendance at NCSI, combined with annual professional development requirements, would help to ensure a career force current in the latest technologies.

The Air Force must also ensure adequate pay, attendance at the right schools (PME and Weapons School), and promotion. Pay must be adequate to avoid the Air Force becoming the postgraduate training ground for industry, thus incentive cyber pay may need to become a reality. The incentive pay need not attempt to offset the difference between an officer's pay and that of industry, but as with flight pay, it must be adequate to reward those who choose to serve their nation but at a reduced wage.

In developing a career path for cyberwarriors, the Air Force should look at its success in air and space. Major commands (MAJCOM), like Air Combat Command, Air Mobility Command, and Air Force Space Command, ensure a nurturing career field for air and space professionals and provide a pyramid rank structure where exceptional young officers have the opportunity for command and promotion with no glass ceiling that may limit their abilities. The Air Force must find a home and advocate for future cyberwarriors, one equal to that of air and space. It will take time for cyber colonels and generals to fill command and senior staff positions, just as it did with AFSPC. However, if managed properly, in less than a generation cyberspace will find its officers on par with those of air and space.

Cyberspace also provides an excellent opportunity for Total Force application. Following the precedent established in air and space, the Air Force should incorporate the Guard and Reserve into the cyberspace mission. The first step is to provide billets within the ANG and AFR for cyberwarriors who separate from active duty. This ensures that the Air Force continues to benefit from their investment in developing this new group of professionals while allowing these cyberwarriors the opportunity to continue serving their nation in uniform. Further, the Air Force must develop a construct to incorporate the Guard and Reserve into the "fight." Either through stand-alone units or as part of a blended force, Guard and Reserve personnel can play a significant role in defending the nation against cyber warfare. Who would not want the civilian program manager

in a Silicon Valley dot.com providing that same expertise to the nation as a part of the uniformed Total Force?

No operator should ever have to ask, “Will my weapon work?” However, cyberspace warfare creates just this possibility. By embedding positional coordinates on a computer chip, a weapon could be rendered useless when employed against a specific latitude and longitude. Quality control becomes paramount in the acquisition and manufacturing processes. Some weapon systems and subsystems are too important to rely on the lowest bidder. The answer is not increased regulation but rather revitalizing and protecting the US industrial base upon which production of critical systems and software depends. The Air Force must encourage—through DoD—software development and the manufacturing of state-of-the-art computer chips and subsystems inside US borders by US industry. While American production does not guarantee “virus-free” components, it does enable better quality control, which inspires greater confidence.

Cyberspace acquisition will also embrace a new collection of contractors. These contractors will include some of the major aerospace and computer industries, but more often will consist of smaller software and hardware firms whose innovative nature will drive technological development. To ensure a viable acquisition strategy, the Air Force should include these contractors in a new *Industry Council* where senior military and industry representatives convene to establish requirements and propose technological solutions. This council should meet on a regular basis; often enough to encourage an open dialogue between the Air Force and the innovative elements within private industry. Gathering senior leaders together from industry and the military ensures the Air Force is better informed on current technological breakthroughs, thus allowing it to shorten the acquisition timeline for fielding state-of-the-art technologies.

The Air Force must also partner more extensively with the private sector—universities and commercial industry—to leverage American expertise. Despite the extent of expertise within the Air Force, the private sector will continue to define the edges of the technological and cyberspace revolution. In addition to innovation, the job of the new core of cyber professionals will be to translate civilian expertise into national defense capabilities. Thus, partnering will be necessary to provide the Air Force with state-of-the-art hardware and software as well as offensive and countercyberspace operations capabilities. Also, the private sector can provide “on-call” capacity not resident in the Air Force. Once again, space operations provide a viable model.

When a satellite fails to function properly, an “anomaly resolution team” convenes. This team—composed of military, DoD civilians, and contractors—makes recommendations on possible solutions. Following this example, a cyber team could bring together similar experts to develop courses of action against an ongoing network attack or to determine effective counter cyber options. This approach makes expertise available when needed and ultimately reduces operating costs in an era of static or declining budgets.

Just as cyberspace brings enormous challenges, it also promises great reward. In this domain, tremendous power can be exerted through the flow of information—packed as electrons. Reach is immediate and global but requires constant vigilance against attack. Everyone understands the inconvenience when e-mail or the Internet goes down; however, we have ways to cope. From making a phone call, to using a fax machine, to going to the library to look up a reference, we find work-arounds to deal with the loss of connectivity. What the Air Force cannot compensate for as readily is the destruction or theft of classified information or hidden code in weapon systems that activate when least expected. Success will require a new core of cyber professionals: men and women who will not only ensure the Air Force maintains its technological lead in defending the nation, but who will also chart the future in this newest frontier. Their success or failure depends on the actions that the Air Force takes as a cyber force provider today. These actions must lay a strong and supportive foundation for the future.

Conclusion

The challenge ahead continues to require us to question preconceived notions of how to best employ military capabilities to serve the national interests. Our strategy attempts to synthesize the best options for securing the nation and our service’s future. While many creative, perceptive, professional, and thoughtful people may disagree with our recommendations, all must conclude that senior leaders, in a time of great turmoil, felt strongly enough about their service to invest resources in an introspective analysis. Coach Paul “Bear” Bryant once said, “[H]ave a plan for everything. A plan for practice, a plan for the game. A plan for being ahead, and a plan for being behind 20–0 at half, with your quarterback hurt and the phones dead, with it raining cats and dogs and no rain gear because the equipment man left it at home.”⁵ While no plan may cover all con-

tingencies, we offer to the nation and our service a study that evaluates our progress, questions our assumptions, and proposes creative alternatives that help us confront the complex challenges of tomorrow's global security environment. **SSQ**

Notes

1. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: Office of Secretary of Defense, September 2006), 23.
2. Peter B. Teets, Testimony before House Armed Services Committee, Subcommittee on Strategic Forces, 25 February 2004.
3. Forrest McCartney et al., *National Security Space Launch Report* (Santa Monica, CA: RAND, 2006).
4. Gordon England, deputy secretary of defense, memorandum, to secretaries of the military departments, 12 May 2008. (for official use only)
5. Quoted in Brad Winters, *Leadership Quotes by Coach Bear Bryant*, <http://www.coachlikeapro.com/coach-paul-bear-bryant.html>.

Understanding Airpower

Bonfire of the Fallacies

Colin S. Gray

THIS STUDY rests upon two vital assumptions, both of them anathema to post-modern minds. First, it believes that historical truth can be found, or at least approached. Second, it believes in the utility of ambitious theory. The discussion here flatly rejects the proposition that “history” simply comprises competing “fables” told by historians with interests and attitudes.¹ Similarly, it dismisses almost out-of-hand the belief that one theory is worth about as much as any other, which is not very much. This analysis seeks to find plausibly verifiable truth and, as a consequence, to identify error, the “fallacies” in the secondary title. To understand airpower, most especially American airpower, is a task imbued with high significance for national and international security. But, this task is harassed and frequently frustrated by both unsound history and incompetent theorizing. The problem is that those who debate airpower typically seek the history that they can use to advantage, not the history that strives honestly to be true. As for the theory of airpower, it never did take off safely; it continues to fly in contested skies or to taxi indecisively on the runway. No single short study can aspire to correct for 90 years of poor history and shoddy theory, but it can at least make a start.

The hunter who seeks to find and slay fallacies about airpower finds himself in a target-rich environment. Paradoxically and ironically, airpower’s most forceful advocates, from the time of Billy Mitchell (1920s) to the present, also have served as its worst enemies. *The prime loser has been US national security.* A good story overstated rapidly becomes unpersuasive

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to those as yet uncommitted. Moreover, generic critics of airpower have been delighted to hold the aerial arm to unrealistic standards for successful performance, as specified, or certainly implied, by its own spokespeople. This is frustrating, because theory useful for education and ultimately for guidance in action falls victim to unsafe historical judgments and insecure concepts.

Alas, this is just the way things are. Parochial analysis and counter analysis is a fact of life in the extended defense community. Exhortations for greater objectivity are entirely futile, no matter how sincerely they are meant. Like Caesar's Gaul, the military instrument is divided by geographical focus into three main parts, with space and cyberspace in addition pressing ever more insistently for status, attention, understanding, and funding. We may deter and, if need be, fight, one war, but we must fight it in its separate, albeit fairly interdependent, military geographies. Every community on Earth develops a protective ethos, invents a self-defining doctrine, and struggles to assert its material and spiritual interests.² Obviously, military communities can be no different from the norm. In other words, interservice rivalry is just an eternal fact of life. History and theory are prime weapons in this ongoing contest. Mythology matters. Legends have a lasting currency. Fallacies need to be exposed insofar as this is possible, if only to provide some policing discipline in a defense debate that can stray into the dysfunctional zone. An open market for ideas and evidence-based historical judgment is essential. Key to the quality of the historical and theoretical/doctrinal production offered in this market is a fearless commitment to burn such important fallacies as can be located and targeted. The hunt is on.

This is a two-step inquiry. First, the varied character of the challenge posed by major fallacies is identified and outlined. Not all fallacies are stamped from the same mold. Some are sincerely held, others are merely expedient beliefs, but most either are, or become, both. The human ability to adhere to that which serves what we believe to be our interests is all but infinite.

The second step is to find and expose major fallacies about airpower. Eight are selected for trial by critical analysis and empirical verification. Phillip S. Meilinger has already made a most useful contribution to the necessary mission, and this study is in his debt. His *Airpower: Myths and Facts* provides exemplary proof of what can be achieved by precision bombardment with a host of checkable facts.³ My work here can be viewed

as an attempt, at least, to continue on from Meilinger's excellent history, albeit from a higher altitude. Deliberately, my aim is to find and destroy beliefs that have extensive leverage over practical matters of doctrine, posture, and operational behavior. My eight broad fallacies are not as obviously empirically refutable as were Meilinger's massacred 14, but, appearances to the contrary possibly notwithstanding, they are no less vulnerable to evisceration.

Fallacies to Left of Them, Fallacies to Right of Them, Volleyed and Thundered

I must apologize to the memory of Alfred, Lord Tennyson, whose immortal poem, "The Charge of the Light Brigade" (at Balaclava in 1854 in the Crimean War), is the inspiration behind the title to this section. Following Sun Tzu, we must begin by knowing the enemy.⁴ Also in the Chinese tradition, we need to bear in mind the heavy salience of deception. Arguments apparently about airpower often conceal other agendas. Readers may choose to compose their own lists, but this study is content to get a grip upon its subject by means of recognizing, being alert to, no fewer than seven types of error or fallacy.

- (a) 1. sincere
- 2. insincere
- (b) 3. factual
- (c) 4. logical
- 5. error of conception (wrong question, wrong answer)
- (d) 6. refutable
- 7. irrefutable

Purposely, these seven non-exclusive analytical scalpels do not comprise a uniform tool set, but they do tend to cluster. Each of the fallacies exposed below can be categorized by (a) motive, (b) character, (c) logic, and (d) evidence. It may be needless to add that a fallacy may comprise a compound product made of factual, logical, and fundamental conceptual error—a "triple whammy!"—as well as being either sincerely held or not, and more, or less, refutable. *The law of unintended consequences tells us that*

when airpower theorists commit gross errors of fact, logic, and conception, they arm their enemies in debate.

This text generally chooses to dignify the historical reality of argument about roles, missions, policy, strategy, weapons, and budgets, with the word “debate.” Strategic intellectual debate is important, but it is only one strand to what we know without overmuch affection as “the policy process.” This process is political by any definition, which means it is about relative power. US national security policy and strategy emerge typically with characteristically bland and even banal content from a protracted, indeed endless, political struggle among a small set of stakeholders. Because policy and strategy are of necessity intensely political in nature, they are all about “who gets what, when, how,”⁵ and what is done with what is won. There is no Great Objective Strategic Person as a stakeholder. Although ever higher levels of political authority should equate to ever more objectivity vis-à-vis the contending parochialisms at lower levels—among the services, or among military functions—one soon realizes that every player in the grandly complex policy-and strategy-making process has his own interests. And, those distinctive interests paint strategically unique pictures of reality for their players.

Overall, even if it is conceded to be discoverable, how can strategic truth possibly matter in the context of a policy-and strategy-making process that apparently is so indifferent to it? The basic answer to this skeptical cynical question is that the United States can be well or ill prepared along a spectrum for the strategic challenges it will face. The content of the choices made on military posture and strategy matter deeply, whether or not it is the product of careful strategic analysis. Moreover, practicably viewed, the US government is no more, or less, peopled by Rational Strategic Persons than is the world at large. Every polity, no matter what its culture, makes strategic decisions through a political process. Furthermore, even though important tracts of national security country can be cleared of some, at least, major fallacies, much that is key to our future safety is inherently unknowable and therefore must be contestable. At the very least we are obligated to harass the purveyors of fallacy, embarrass them, and limit their ability to cause harm. Although it is all too easy to be pessimistic over the prospects for strategic understanding, it is a fact that better ideas succeed against worse ideas more often than might be expected. While there is much to criticize about US defense policy, strategy, posture, and behavior, also there is much to praise. One important reason why there is

so much to praise is because a small body of defense professionals is committed to the pursuit and dissemination of reliable history and effective theory and doctrine. In addition, the US armed forces demonstrate an unrivalled willingness and ability to learn from their mistakes. In 1968 and in 2007–8, America's military made huge course corrections in the context of ongoing warfare. Many countries' militaries could not have effected such radical changes.

Those readers with continental, maritime, space, or cyberspace mindsets and worldviews may believe that their most-favored military strategic instrument is unfairly treated in this analysis. Two claims must be recorded promptly. First, the purpose of this study is to tell the truth about contemporary airpower, not to promote the aerial instrument as an end in itself. I believe strongly that this "bonfire of the fallacies" will serve to advantage both the airpower stakeholder in US national security and *the rest of us*. After all, it is *our* airpower that is the focus of this assessment. Second, airpower is not the only military instrument whose true value is menaced by the popularity of significant fallacies. One could, and probably should, serve national security by exposing fallacies about the other American military instruments. In a previous publication for the Airpower Research Institute, I argued that although airpower theory is weak and contested, so also are the general theories with which we seek to explain land power, sea power, space, and cyber power.⁶

Airpersons may be unhappy with an item or two among these fallacies. The analysis takes serious issue with some service beliefs of such longstanding and historical authority that they are akin to being sacred. Doctrine, after all, is not only about what is believed to be the best military practice. In addition, sometimes preeminently, it amounts to a credo. To overreach in what is believed to be a good cause is all too human. What can be termed the "friendly fallacies," those prompted by airpower's advocates, are apt to be more damaging than the "unfriendly fallacies" disseminated by airpower's foes.

The Fallacies

This analysis of major fallacies needs to be prefaced by five aids to proper understanding. If readers judge these points to be reasonable, they should be able to approach the candidate great fallacies much as does this author.

First, the fallacies are not presented as quotations. One can locate quotations to support just about any belief about defense matters. Sometimes it is useful to illustrate a claim with a single verifiable quotation, but as often it is not. I contend that each of the fallacies discussed below is both widely believed and carries implications important for national security. The precise wording of the fallacies is driven by a determination to present the erroneous statements as clearly as possible. The fallacies are not straw targets; they are all too real as persisting beliefs and attitudes. Some of the fallacies are fundamentally so hostile to airpower that they are rarely stated as unambiguously as they are recorded here.

Second, we have to be careful to guard the integrity of distinctive, albeit linked, levels of analysis. With thanks to the useful concept of “mission creep,” we should be alert to the danger of “level-of-analysis-creep.” We must not permit tactical, operational, strategic, or political verities to slide promiscuously from level to level. For example, John Boyd’s famed OODA loop (observe, orient, decide, act), may have tactical and even possibly operational merit, but it is far less plausible when presented as the strategist’s “theory of everything.” One has to be alert to the temptation to apply a good-looking conceptual key to every intellectual lock in sight.⁷

Third, reluctant though many debaters are to admit, frequently it is the case that within a fallacy there is a truth struggling for recognition. Hardly ever, indeed probably never, is a significant belief about a strategic issue utterly bereft of all merit. In the heat of defense debate, it is not difficult to persuade oneself that his or her debating rivals are not only somewhat ignorant and misguided but are knaves and fools as well. They may well be such people, but it is never safe to assume so. If we neglect to honestly seek to understand an unfavored argument and probe it for merit, then we both invite intellectual ambush in debate and ensure that our position is not as robust as it should be.

Fourth, fallacies can be situational. However, defense debate is not entirely innocent of “flat-earthers” who insist upon ideas that seem to us to have zero value. Actually, such ideas can have negative value because they may be sufficiently popular that a great deal of scarce time and energy has to be expended countering them. But, many strategic beliefs are neither valid nor invalid in general terms. For example, unremarkably, airpower has always been highly effective tactically and operationally over desert terrain. Provided one enjoys air superiority, an enemy’s army in the desert has no place to hide. Beliefs about the quality of threat to land power

posed by a superior enemy air force are shaped by experiences in particular geographical and military contexts.

Finally, in the absence of thoroughly incorruptible and totally competent professional analytical policemen, well-trained defense theorists and analysts are able to produce the answer that they want, and with which they began, by means of the simple method of selecting the question, or at least the wording of the question, friendly to their purpose. This seemingly banal point alas is all too relevant to the history of airpower, up to, and including, the present day. For example, it is not especially difficult to demonstrate with overwhelming empirical plausibility that “airpower has failed”⁸—provided one is allowed to construct the test that sets the “pass” mark. More often than not, airpower’s more vociferous generic advocates have cooperated in their own intellectual destruction by themselves setting out airpower’s stall with improbably heroic claims. To risk stating what should be hugely obvious, if one wants to be sure that the answers will be “right,” then he or she must be careful in drafting the correct questions. Since even honest and competent analysts can err greatly in defense analysis, it is scarcely surprising that the less honest and the not fully competent are able to thrive in an extended defense community as large as ours. And this is why we need to attend most assiduously to the necessary task of exposing fallacies.

None of the fallacies deployed and exposed here are of my invention. However, they are crafted in the form selected not for the purpose of impaling particular people and institutions—though that might be considered “bonus damage”—or even directly to win debates, but rather to serve as keys to unlock rooms currently cluttered with misunderstandings.

Fallacy One: *Airpower is an inherently strategic instrument.*

It has long been doctrine, formal and informal, even canon-law equivalent among airpersons, to claim that airpower (written as a single word, not as air power, the standard pre-1940 usage),⁹ is uniquely “strategic.” As best one can tell from history and logic, this assertion rested upon the belief that airpower alone among the geographically distinctive military instruments could be independently decisive in war, or as a deterrent in peace and crisis. This is a relatively sophisticated version of the strategic rationale. Less functional reasoning simply insisted that airpower is, or can be, “strategic” because it is long-range or somehow very important. The somehow was rendered helpfully specific, indeed to the point of

transcending grounds for contention, with the advent of the nuclear age. In the late 1940s and early in the 1950s, it was commonplace for speakers and authors to associate “atomic” and airpower so closely that adjective and noun all but fused into a single, grand conception.

Although rarely stated explicitly, the claim that airpower is inherently strategic implies strongly that land power and sea power (and now space power and cyber power) are not. The claim matters enormously because it carries the message that airpower, being uniquely strategic, matters most. The implications of what we shall demonstrate to be a fallacy could hardly be more serious for “strategic” understanding and, of course, for budgetary shares and their postural, career, and industrial consequences. It is well worth noting that despite its traditional adherence to belief in airpower’s uniquely strategic quality, adaptive practice by the Air Force persistently has belied the tenet. It is clear from the historical record why airpersons registered the claim for a uniquely strategic status.

Two reasons were dominant. The first was no deeper than a genuine lack of conceptual grasp of the proper meaning of *strategy*, and, hence, of *strategic*. The second reason, much aided by the conceptual disorder of the first, was the perceived necessity to rest the demand for institutional autonomy, even independent service co-equality or better, upon the firmest of bases. If airpower could deliver victory in war essentially unaided by the older services, its claim for independence should be undeniable. The arrival, then proliferation of atomic, succeeded by hydrogen, weapons, seemed to close off any merit in further debate. After all, what could be more “strategic” than the capability to obliterate the USSR and China in a matter of hours? The tenet that nuclear-armed airpower is uniquely strategic appeared to be self-evidently true. It was both *the* deterrent and, if necessary, the instrument of Armageddon for the Evil Empire. Alas, such a commonsense view was seriously in error. Moreover, it was seriously erroneous in ways that have effected lasting damage to sound appreciation of airpower’s potency. In other words, the claim for inherently strategic status is both fallacious and gratuitously self-harmful. What do we mean by this?

To explain this fallacy and correct for it, one must begin by clarifying the meaning of *strategy* and *strategic*, and by explaining why it is vital to adhere strictly to this meaning. Stated at the most basic of levels: *policy* provides political goals to be secured; *military strategy* provides ways to secure them; and *tactics* does the actual securing. If one confuses these

three fundamental distinctions, one enters a world of theoretical, doctrinal, and, especially of note, practical grief. The critical difference between the strategic and the tactical is the quality of instrumentality. Strategic effect is distinctive in kind or quality from tactical effect, not in quantity. A vehicle does not become strategic because it is intercontinental in range rather than merely intraregional or even intracontinental. A weapon, a capability, a project, is strategic only in its consequences.¹⁰ Yes, US airpower inherently has strategic meaning, as does US land power, sea power, space power, and cyber power. The most crucial relevant concept is *strategic effect*. By this we mean the consequences of (tactical) actual military behavior for the course and outcome of a conflict. It is conceptual and practical nonsense to assert that some weapons and behaviors are strategic, while others are merely tactical, perhaps operational.

A military instrument deemed inherently strategic is difficult to question strategically. What one has done is to fuse the tactical and the strategic categories of thought and behavior, with the inevitable result that the intangible utility of strategic values—their political effects—all too readily evade attention. Not to dodge the bullet, one is likely to produce a context wherein military action is divorced from intelligent political direction—via strategy and political assessment—again via strategic review. The strategist must always pose the question So what? Belief that there is inherently strategic military behavior is apt terminally to foreclose upon the insistent levelling of this challenge. However, as claimed here, there can be no inherently strategic forces, whether or not one is strategically educated. At issue here is not an arcane academic point of theory, possibly appearances to the contrary admitted. It is a fact that there is, and has always been, a fundamental distinction between behavior and its consequences.

The damage to American airpower wrought by this fallacious seizure of the “strategic” ascription takes several forms. First, it all but obliged US air planners, strategists, to seek independent decision through airpower, given their assertion of the uniquely strategic quality of their instrument. Since such independent decision is only very rarely achievable, because of the complexity and variety of wars and warfare, airpersons are setting themselves up for demonstrable failure. Increasingly it has been the case that in regular conventional warfare, superior airpower decides which belligerent will win, though it will be unable to deliver conclusive victory unaided.¹¹ This was the case in both Gulf Wars. The quest for independently decisive airpower is pursuit of a chimera. The United States would like to

have such a capability, reliably, but that is not possible. So, it should be more than content to settle for an airpower that will “decide” who wins its regular conventional conflicts and delivers literally critical support when land power or sea power truly must be the leading executive agent of military decision.

The misuse, and genuine misunderstanding, of strategic also encourages underappreciation of airpower’s nonkinetic impact upon the course of strategic history. Most people recognize that airpower is a concept and material descriptor that embraces everything that flies—rotary and fixed (and adjustable “swing”) wings—but the abuse of strategic leads to undervaluation of airpower’s many nonkinetic roles. In COIN (counterinsurgency operations), for a very current example, while airpower provides essential firepower support, also it enables high tactical mobility to friendly forces—insertion and timely extraction, reconnaissance, search and rescue, medevac, resupply, and humanitarian relief—to cite but some among airpower’s roles and missions.¹² The point is that every one of the duties just cited, kinetic and definitely non-kinetic, will have more, or less, strategic effect upon the course of a COIN campaign. The proper appreciation of airpower’s strategic value requires final abandonment of the old dogma that it is inherently a strategic instrument. *Soundly viewed, all of America’s armed forces are strategic agents.*

Fallacy Two: *The development of airpower is driven by technology, not ideas.*

It is commonplace to believe that airpower not only *is* technology, but also, pathologically, is *about* technology. This belief, which we shall demonstrate to be fallacious, holds that airpower is an ever-dynamic product of the “ripening plum” syndrome. The fable insists that technologies engineered into aerial vehicles mature more or less for reason of sheer technical momentum and cumulative, sometimes radical, innovation. The roles of political context for policy, of strategic demand, and of operational and tactical requirements are judged historically to have been distinctly secondary. Technology, duly reified in this view, moved on for not much better reason other than that it could do so. It is probably true to claim that a majority of commentators upon airpower history have subscribed to this erroneous opinion.¹³ In effect, the fallacy claims that airpower can be likened to the sorcerer’s apprentice, continuing mindlessly to go on doing what is being done currently, regardless of consequences. Technological

advance is its own rationale. At ever greater expense, so the argument proceeds, technology as airpower advances to nowhere in particular for no good political or strategic reasons. Technology is the pilot; it is served by policy, strategy, operations, tactics, and logistics.

This assertion can appear to fit historical facts. Airpower flies ever upwards in its technical specifications and performances, whether or not the performance enables net military, strategic, or political achievement that is useful. Why is this argument important? It taints the necessarily technological product that is airpower with the strong suspicion, or worse, of costly stupidity. Air forces generally purchase ever-more-sophisticated (i.e., expensive) aerial vehicles even though strategic, operational, and tactical ideas for their employment persistently have lagged behind. Restated, the claim is to the effect that the history of airpower has been the story of a supply-led, not demand-led, instrument.

To endorse this belief is to risk seduction by the attractions of technophobia. Because people matter most and it is characteristically American to place faith in technology, it is tempting to cite technologists, even a reified technology, as villains. Somehow, the material servant has replaced the political and strategic master. The principal reason why this fallacy is so significant is because *technology continues to be the source of marked competitive benefit to the United States and its foreign security dependents*.

The country can ill afford a generic, frequently uninformed, suspicion of technology when technical achievement is America's leading asymmetrical advantage over foes of all kinds. If Americans are apt to employ technology, especially as firepower that can prove counterproductive, the problem lies with culture, theory, and doctrine, not with the machines themselves. Theory and doctrine for airpower have left much to be desired, but it makes no sense to seek improvement by demeaning technology.¹⁴ Airpower is as airpower does, and what airpower is allowed to do is a matter of human discretion, guided by ideas. This second major fallacy implies that a mighty abstraction, airpower, somehow has developed while, perhaps by, evading political, strategic, and military control. The confusion of technological instrument with human agency promotes the conviction that airpower typically has failed in war after war. Time after time, so the tale is told, it did not deliver upon its promise, explicit and implicit.¹⁵

The view just expressed is a fallacy not so much because it depends upon an unsafe conceptual architecture, though that is the case, but rather because it is historically inaccurate. From the nineteenth century until

today, ideas—strategic and other theory—generally have led technical achievements. The whole historical saga of airpower has been peopled by scientists and engineers who have striven to solve technical problems so that the flying machines could perform as political, military, and commercial clients required or desired.

Airpower in all its shapes and forms has always been the product of a specific vision, or visions, of utility. One quality in particular never in short supply among the air-minded is a notion, clear or fuzzy, of the value of aircraft that currently are over the technical horizon. In historical practice, there has been an air community, comprising inventors, manufacturers, and prospective commercial and military people, who have conducted a constant dialog. Sometimes the aircraft and ancillary industries have invested speculatively in technical innovation in the hope that military and/or commercial customers will be unable to resist the new performance plausibly on offer. However, even when industry and its engineers move ahead of explicit military demand, it is nearly always the case that the need to achieve a definite capability guides the enterprise. Technology does not advance as it were mindlessly, bereft of purpose beyond curiosity and profit. Rather must it be driven and shaped by goals that make sense to, and can be defended by, the intended customers.¹⁶

The relationship between military demand and industrial supply is not unidirectional. Manufacturers do conceive of vehicles, qualities in performance, and even of missions, that potential clients did not know they needed before they were educated, which is to say “sold,” by intending suppliers. In practice to date, armed forces have wanted more performance than aerial technology could provide. In large part, though, this situation now has been so altered that the “transformation of American airpower” described and assessed so convincingly by air analyst and pilot, Benjamin S. Lambeth, nearly 10 years ago now, is approaching perfection.¹⁷ The problems are no longer with a technically flawed military instrument, but rather with the nature of warfare as a duel. Uncooperative enemies have been sufficiently disobliging as to devise tactics intended to deny US airpower the targets it could certainly destroy were it able to locate them reliably. The potential perfection of American airpower, certainly as a kinetic tool for dealing out firepower, must remain only potential, albeit excellent, because its enemies will be motivated, and to some degree able, to find ways to offset the prospectively conclusive US military advantage in the air.

The airpower that we buy is the result of ongoing negotiation among many stakeholders, civilian and military. It expresses the balance of political power within the policy-budgetary process; the public political mood vis-à-vis security; the state of the art in weapons and other technologies relevant to airpower; and, last but not always least, systems of belief about air tactics, operations, and strategy. Would-be innovators, individuals, and teams will offer the Air Force dazzling prospects of military performance and value for what currently may only be glints in the eye. But officials and politicians are not in the habit of buying into visions they do not share. Theory is not all that matters in the grand historical narrative of airpower, but it does matter most, and it always has. Even available technology will not be acquired and applied if it fails to fit settled military doctrine.

Throughout its history, US military airpower has expressed strategic, operational, and tactical beliefs, as well, naturally, as the evolving state of the technical art at the time of procurement, as well as subsequently when in-service midlife upgrades would be effected. The latter point is simply a necessary truth; it does not mean that as a general rule technology has led ideas on military utility. Not infrequently, though certainly not invariably, a country is obliged to fight with a basket of air and air-related technologies that are either more or less technically inadequate for their tasks, or that express what proves by events to be the expression of faulty technical choices. This last point does not always, probably usually, refer to technologies that did not perform as expected, but rather to those that provided a military air posture ill suited to the war it had to wage.

Finally, the “transformation of American airpower” achieved since the first Gulf War (1991) has been a cumulative achievement—visible over Bosnia in 1995, Iraq in 1998, Kosovo in 1999, and then over Afghanistan and Iraq in the 2000s—expressing strategic, at least military, theory as well as what technology can do. The latter has not in some deterministic fashion produced the former. US airpower today is very much the airpower desired by American ideas. There is always room for technical and doctrinal improvement, but that is a different story.

Fallacy Three: *Airpower is about targeting.*

No, it is not. What airpower is about includes the military, strategic, and political consequences of its targeting. The greatest of all air theorists, Italian general Giulio Douhet, claimed that

[A]s a matter of fact the selection of objectives, the grouping of zones, and determining the order in which they are to be destroyed is the most difficult and delicate task in aerial warfare, constituting what may be defined as aerial strategy.¹⁸

A little later, Douhet reemphasizes the point that “[t]he choice of enemy targets . . . is the most delicate operation of aerial warfare.”¹⁹ This fallacy holds that aerial strategy is the selection of targets. Airpower properly employed, which is to say true to its offensive nature, influences and even controls the course of events on the ground and at sea primarily by its kinetic effect. For airpower the world is akin to a dart board. The salience of this comparison is highlighted by air theorist John Warden’s “Five Rings” of target categories.²⁰ Airpower delivers on its potential when it is unleashed to damage and destroy the vital centers of enemy power.

To claim that airpower is about targeting is not entirely wrong. It is only an error if one insists that targeting for kinetic effect is all that really is important about the roles of airpower in war. The roots of this fallacy are not exactly hard to trace, any more than are the reasons for its continuing popularity among some misguided airpersons. While targeting for bombardment from the air can be regarded as a duty that enables more effective land power and sea power, also, of critical moment to airpower as a cause or quasi-religion, it is the behavior that allows airpower to win wars independent of significant war-fighting assistance from the other military instruments and their agencies. Unfortunately, perhaps, although firepower from altitude, whatever the character of the vehicle, is nearly always useful, and sometimes is far more than just useful, it cannot be synonymous either with war as a whole or even with warfare. It should be clear enough from this analysis that the fallacy does not lie in claiming importance for the targeting function, or for kinetic impact from the sky. Rather are the fallacious elements: (1) the belief that bombardment can equate to warfare, let alone to war; (2) the belief that bombardment itself, somehow, mysteriously, *must* translate into a strategic effect that will prove politically conclusive; and (3) the belief that airpower’s distinctive strategic contribution is focused in its ability to damage things and kill people.

Lest my argument has been at all obscure, let me restate it in the most direct possible terms. Airpower writ large generally must express careful thought on targeting. But airpower is not, and cannot be, *about* targeting. What matters is not targeting per se or even the damage that well-directed aerial bombardment can inflict. Instead, what are of importance are the effects of that damage upon the course and outcome of a conflict. This is

why a previous discussion in this study zeroed in on the fallacy that airpower is, or can be, inherently “strategic.” What airpower does cannot be strategic, regardless of what one calls a military organization (e.g., SAC or Strategic Command). What is strategic about airpower and its behavior—and land, sea, space, and cyber power—is its instrumental value.

The targeting and symbiotically associated kinetic themes in airpower theory have an unfortunate tendency to crowd out appreciation of the less dramatic, but frequently no less important, activities of air organizations. *In truth, airpower is all about mobility and power projection.* It is about bringing fire to bear on the enemy, be he near or far; about inserting and extracting friendly ground troops;²¹ about surveillance, reconnaissance, and other forms of intelligence gathering; about supply and its movement; about medical evacuation; and about search and rescue. Also, our airpower is about the business of helping train the airpower of friends and allies.²²

This fallacy hurts at two levels. It risks encouraging the false belief that warfare is really all about killing people and damaging materiel, in this case from weapons in vehicles in the sky. Such violence is necessary and indeed is the most defining characteristic of war.²³ However, wars are not won by violence alone, and the violence exercised can be more or less effectively chosen. Also, the fallacy, by its implicit exclusions, demotes the importance of airpower capabilities and behaviors other than the kinetic. US airpower, in all its forms, performed magnificently over Southeast Asia from 1964 to 1973. It “failed” only in the sense that neither when employed independently to coerce nor when used to support the warfare in the South (and, to a lesser extent, over Laos and Cambodia), could it deliver or help deliver a fair facsimile of victory. There are wars wherein an appallingly flawed strategy, and sometimes even a thoroughly ill-advised political purpose, can be offset by the strategic effect of the military power applied. Vietnam, unfortunately, was not such a case.²⁴

Fallacy Four: *Airpower must always be subordinate to land power.*

Because we humans can live only upon the land, and because all of our inter- and intra-communal quarrels must have terrestrial reference, it has to follow that land power is the senior military instrument. No matter how influential the joint contribution from the sea, air, space, and cyberspace, conclusive effects and their consequences have to be terrestrial. Militarily speaking, according to those who subscribe to this fallacy, it follows of necessity that land power must always be the supported instrument.

This fallacy is important because, as so often with plausible conceptual errors, it contains sufficient truth to be highly credible. Little imagination is required to grasp why this erroneous belief is dangerous to strategic effectiveness. *A blanket conviction that land power must always be the dominant military instrument all but ensures some misuse of airpower.* This fallacy presents a minor, even banal, truth as justification for a massive mistake. Let us concede the truism that every conflict has terrestrial reference. We humans do not live in, or fight for, the air. When we fight in the air, or for the purpose of dominating some segment of the air, it can only be in pursuit of advantage in a terrestrially defined contest. These elementary facts should be as uncontentious as they seem often to be unknown to rival theorists and practitioners.

The land power versus airpower controversy, which has flickered and flared from the early 1920s until the present day, reflects a pervasive Western intellectual weakness—a liking for binary distinctions. Warfare allegedly is regular or irregular, conventional or nuclear, symmetrical or asymmetrical, and is led by land power or airpower. Western strategic debate has great difficulty accommodating the holistic subtlety of both/and, *ch'i* and *ching* (unorthodox/orthodox, energetic/passive). This systemic conceptual limitation is especially unfortunate, given the increasing, though limited, number of important tasks that are not necessarily owned exclusively by any one of the five geographical environments. Rephrased, today, far more than ever in the past, some military tasks can be performed on land, from the sea, *and* from the air. For the most obvious example, firepower with comparable accuracies can be delivered by artillery, land-based short- and medium-range missiles (ballistic and cruise), from ships, and in principle from orbiting satellites. Notwithstanding our joint organization for war fighting, the distinctive physical geographies continue to hold a telling grip on minds and, of course, on bodies. The geographies are real, and to operate in one rather than in or on another requires unique equipment, doctrine, training, tactics, strategic reasoning, and mind-set. For reasons of inherent physical limitations as well as state of technology, the inter-geographies military and strategic debate largely is focused upon the relationship between land power and airpower. Other debating pairs are possible, indeed are extant, but none (say, airpower versus space power, or land power versus sea power) has the fuel currently available to soldiers and airpersons.²⁵

It may occur to some readers that debate between spokespersons for land power and airpower is ever liable to be impoverished by the troublesome swamp of spongy definitions. What is land power? What is airpower? These apparently conceptual, even philosophical, concerns have major implications for the power and influence of military institutions and for the manner in which we fight. This is not simply a matter of idle intellectual curiosity, rather is it a subject area deeply infused with practical significance.

Common sense is not always victorious in military debate, but let us at least try. All military power is land power. Our military strength both derives from the land, whereon we have to live, and must be sustained by our assets on land. This is true for armies, navies, air forces, space forces, and cyber forces. Although it is perhaps a trivial, because necessary, truth, more explicit recognition of its merit might help defuse some needlessly angry contention.

What is military land power? If it is anything that can fight or contribute quite directly to our ability to fight on land, why should understanding of its domain be limited to the ground? Since the US Army owns more aircraft—helicopters, in particular—than does the Air Force, does it make sense to conceive of land power distinct from airpower? *Given that the United States will never, repeat never, wage ground (or sea) warfare without a more or less integral air dimension as an enabler, a complement, or more, is it useful or even accurate to talk about American land power, sea power, or air power?* I challenge any American defense professional, regardless of service orientation, to claim that he or she can conceive of the country waging war of any character on land or at sea in a manner utterly indifferent to the state of play in the air environment. The very idea is absurd in the 2000s and indeed has been since at least the 1940s.

If we put aside for the moment the argument just presented, which suggests that today the concepts of land power, airpower, and sea power do not reflect military reality very usefully, is it possible to discern any general strategic truth about the relationship between land power and airpower? The answer, for once helpfully, is both “yes” and “no.” Yes, in that the strategic history of the past 20 years demonstrates beyond a reasonable doubt that, *ceteris paribus*, the balance of relative influence between land power and airpower has been shifting in favor of the latter.²⁶ US airpower is vastly more capable than it was in Vietnam, say, though as we noted above, despite a substantially inappropriate air posture, doctrine, and training, still it performed far above and beyond the strict call of

duty. From the 1960s to the present, in conflict after conflict, US airpower cumulatively has been transformed into a truly lethal instrument, regarded either as an agent of kinetic effect or as a multicompetent enabler of ground power. But, and this has to be treated as a noteworthy caveat, the relative importance of airpower, especially airpower of the fixed-wing, longer-range kind, must be situational. Airpower is militarily relevant to every conflict, be it largely irregular in character or be it conventional—in which case it will be the dominant military force—be it largely rural in battlespace or be it predominantly urban. However, its strengths are flattered by some contexts rather than others.

To combat a highly irregular and in the main only part-time enemy who hides amongst quite densely packed civilians, airpower cannot be the leading edge of military effectiveness. In the form of helicopters for tactical troop mobility and resupply, for the infliction of occasional very precise destruction, and for useful reconnaissance and intelligence gathering generally, airpower will be important, even vital. Nonetheless, in an urban context for insurgency, airpower's contribution to the COIN effort typically will be as necessary as it will be limited. The need for sustained presence by friendly “boots on the ground” may be a cliché, but it happens to be a strategic truth that one neglects at peril of failure. Extreme tactical mobility by rotary-wing aircraft has the ability to place small numbers of very lightly armed soldiers in the greatest of danger. And the ability to insert does not always mean the ability to extract at will.²⁷

By way of contrast, if an enemy chooses, or has no practical alternative other than to wage warfare in a regular conventional way, US airpower will defeat it long before US ground power comes into contact. This was clearly true in 1991, it was even more clearly true in 2003, and it should not require any very detailed defense as a thesis for the future.²⁸ US airpower will kill or disable any enemy forces it can locate on land, at sea, or in the air. I would like to add “or in orbit,” but that would not be true. US defense policy and the national military strategy endorse the concept of “space control” unambiguously. Unfortunately, though, for reasons that need not be identified or explained here, the US armed forces currently do not have the means, let alone the official license, contingently to enforce this policy and strategy.²⁹

Although land power, mainly in the form of unmistakable *ground* power, continues to be literally essential for the conduct and conclusion of America's wars, it does not follow that this power must be the primary

instrument of military, for strategic and political, decision. For example, the generally genuinely dazzling prowess demonstrated by the US Army and Marine Corps on the ground in Iraq in April 2003 was enabled by an air campaign that guaranteed swift success.³⁰ This is not to claim that the Army and Marine Corps could not have won without the air campaign, and neither is it to suggest, absurdly, that they did not face some determined, largely irregular foes that could not be lightly brushed aside. It is to claim, though, that as a matter of researchable record US airpower played the dominant role in the brief regular war of spring 2003. Some among America's future enemies may prove far more effective in resisting US conventional military prowess than were the Iraqis in Gulf War II. But, this probability does not plausibly reduce the strength of the proposition that American airpower will decide the course and outcome of its regular warfare.

The thesis that airpower must always be subordinate to land power is fallacious because it rests upon a basic misunderstanding of airpower and its capabilities. Conceptually enabled by the great theoretical and practical oversimplification of a generic "airpower," it is a relatively easy matter to twist the debate into an argument about the efficacy of so-called strategic airpower (see the discussion below). Committing what we should call the "binary error," the use of air striking power independent of operations on land or at sea is condemned as a secondary, or even net futile, effort, somewhat complementary at best to the decision that is being achieved by friendly "boots on the ground." As we show in our analysis of the next fallacy, this error, apart from generally being motivated in large part by parochial institutional interests, is much facilitated by the poverty of historical and current debate about the promise and performance of "strategic bombing."³¹ To clarify hastily: if we are to grasp how air and ground, airpower and land power most especially, relate militarily and strategically, first we need to identify the contemporary measure of their essential unity. In particular, if land power must include a highly significant air dimension, which is the case today, it is not obviously sensible for us to try to argue about their relative military and strategic importance.

Fallacy Five: *The theory of strategic airpower is fundamentally flawed.*

The classical and neoclassical theory of strategic airpower comes in several variants, but its central tenet is to the effect that airpower, properly exercised, is able to be an instrument of independent decision in war.

There is, or should be, a rather more intelligent, less demanding, theory of “strategic” airpower which is eminently defensible historically. Unfortunately, the dominant ancient and modern theory took such firm hold within the air community and has been seized upon for so long by its critics that it is extraordinarily difficult to consign it to the museum of attractive ideas, where it belongs. Because of what have been believed to be its life and death implications for the institutional independence of air forces, and because technology has seemed to provide ever greater support for the key concept, the extreme version of strategic airpower theory continues to live.

Among the classical and neoclassical authors of strategic airpower theory, I will single out just four: Giulio Douhet (1869–1930), Marshal of the Royal Air Force (RAF) Sir Hugh Trenchard (1873–1956), Gen William “Billy” Mitchell of the USAAC (1879–1936), and far more recently, Col John A. Warden III, USAF (1943–).³² The differences in their theorizing arguably are important, significant, and interesting, but they pale into near insignificance in comparison with the breadth and depth of their agreement. Each of these “classical” and “neoclassical” (Warden) theorist-practitioners preached vehemently the gospel that it is possible to secure “a victory for air power and airpower alone,” to quote British historian Sir John Keegan on the subject of NATO’s ultimately successful 78-day air campaign against Serbia over Kosovo in 1999.³³

Douhet claimed that airpower should be employed initially to disable and destroy the enemy’s airpower on the ground. Next, having thus secured “command of the air,” airpower would so terrify a civilian population by direct assault with high explosives, incendiaries, and gas, that its government would be obliged to sue for peace. For his part, Trenchard came to believe that bombing must destroy the morale of an enemy’s civilian population, the same thesis as Douhet’s. But, whereas Douhet was willing to advocate explicitly assault upon civilians, Trenchard always insisted that civilian morale should be attacked through the infliction of damage and destruction upon vital industry. American Billy Mitchell was far less focused upon the mysterious quality “morale” and far more upon the damage that precise long-range bombing could do to an enemy’s “vital centers.” He co-founded the American school of airpower doctrine, which prescribed defeat of the enemy through the destruction of the most vital “nodes” in his “industrial web.” If we fast-forward to the late 1980s, USAF Col John Warden all but individually revived the classical theory

of strategic airpower, though his preferred route to victory by airpower was through the imposition of command paralysis. Warden reinvented the “air campaign” for the contemporary context, albeit with much assistance from the intellectual heritage of Mitchell and the US Air Corps Tactical School of the 1930s. Warden specified a bombers’ dart board comprising five concentric circles.

The most important element—the enemy command—is in the center circle; essential production is second; the transportation network is third; the population is fourth; and the fielded military forces—the shield and spear—are fifth.

The most critical ring is the enemy command structure because it is the only element of the enemy—whether a civilian at the seat of government or a general directing a fleet [*sic!*]³⁴—that can make concessions.

Figuratively or literally, Warden’s vision of a well-run strategic air campaign should seek to decapitate and hence paralyze the enemy. Even if this ambitious goal is unachievable, the five-ring thesis provides a general theory of how an air campaign should be conducted. It explains targeting priorities. In short, it is an air strategy. Of course, the problem is that Warden’s theory, in common with those crafted between the two world wars, is not just an air strategy. The theory is presented as an air theory of war. The theory claims to encompass all that should need to be done, as well as explaining how it should be done, in order to secure victory in war as a whole.

With the arguable exception of NATO’s air war about Kosovo in 1999, “strategic” airpower, which is to say airpower intended by its employers to achieve decisive strategic effect for political success, seems to have failed in war after war after war.³⁵ The air community has defended the integrity of its quasi-sacred doctrine by arguing, repeatedly, that the available airpower was misused, some wrong choices were made as to quantity and quality, and its technology has not been quite adequate for the mission. The first argument has been politically safer than the latter two. It so happens that the airperson’s defense of airpower has had a solid foundation in fact. Airpower has been misused; not infrequently, highly challengeable technical decisions have been made, while it cannot be doubted that prior to the late 1990s and the 2000s, it was hindered significantly in its prowess by some strictly technical limitations. However, this is not to deny that from the 1940s to the present, the military and hence strategic deficiencies of available airpower more often than not have been the product of

a mismatch between the contexts for war fighting anticipated and those that actually happened. One can always do better with tactically more effective technologies, but it helps if there is some natural fit between the higher competencies of a particular air posture and the military tasks that conflicts demand be tackled.

Despite the content of the classic theory, which tends to privilege strongly the bombing of nonmilitary targets, albeit generally not civilians per se (only their “morale”!), a more useful theory of strategic airpower should not be wedded to a rigid template, a doctrinal credo, of bombing priorities. Properly stated, the theory of airpower must inform *strategies* anticipated to achieve maximum strategic effect upon the course and outcome of distinctive, indeed unique, wars. This effect may be secured, for examples, by political or military command decapitation or paralysis, or by the physical destruction and disablement of fielded forces. The historical context must guide the application of airpower. To claim as a grand generalization that “strategic bombing does not work” is plainly wrong, theoretically and empirically. Faulty theory has a way of producing flawed answers.

Fallacy Six: *The institutional independence of the USAF is a major hindrance to the development of a truly joint, coherently integrated, American theory of, and doctrine for, warfare.*

This is a plausible fallacy to most non-airpersons. Even to those with no organizational stake in the abolition or radical demotion of the USAF from its current status as a distinct, bureaucratically coequal, armed service, this claim appeals to both strategic logic and common sense. This being so, it is perhaps surprising to appreciate just how erroneous the argument proves to be when subject to close examination.

The fallacy holds that the United States does not require an institutionally, and hence politically, independent Air Force. The claim has several interlocking pieces. Although there remains a long-range (presumably very largely nuclear) strike mission, there is no strict necessity for this even to imply the need for a USAF. The mission increasingly can be fulfilled by seaborne forces, while the comparatively recent creation of US Strike Command expresses the conviction that strategic offense, defense, space, and cyberspace forces should be organized and commanded as a single bundle of assets. Nuclear deterrence, for example, is a national strategic task, not an Air Force one, and this has been a reality since the 1950s, when the US Navy first acquired the ability to strike at Soviet targets

with nuclear weapons. In addition to there being no strategic nuclear (or other) mission that might lend persuasiveness to the case for independent airpower, the entire historical record of airpower in warfare demonstrates the complementary character of airpower, land power, and sea power (and now space power and cyber power).

Institutionally and politically independent airpower cannot be trusted to perform as a reliably joint team player. The deepest belief of airpersons is that theirs is an instrument uniquely capable of securing independent military and strategic decision. While they can be bludgeoned into air-land and air-sea cooperation, usually they will perform reluctantly in those roles. They are not just being uncooperative for its own sake. Rather will they be strongly motivated to resist what their quasi-religion of (strategic) airpower tells them is the proper employment of their specialty.

The core problem, this fallacy insists, is that an independent air force creates and sustains an air ethos that history shows to be counterproductive for the most effective prosecution of warfare in all its complexity. All major institutions, especially military ones, are obliged to invent, foster, and officially adopt, distinctive cultures.³⁶ I should rush to explain that there is no necessary implication of a malign parochial, if Machiavellian, cunning in this argument. Generic opponents of institutionally independent airpower usually can be brought to recognize that airpersons are quite sincere in their credo, albeit mistaken. I could proceed further to present the arguments against a separate USAF, past, present, and prospectively future, but I believe that the points exposed already will suffice. The indictment, for this is what it amounts to, is truly serious.

There are, and have always been, some unworthy reasons fueling this fallacious belief, but also one must admit that there is some good sense. Stated at its broadest, the purveyors of this fallacy—the sincere ones, that is—fail to grasp that separate armed services are a regrettable necessity. One could even go so far as to claim that an independent Air Force, Navy, Army, and (sort-of) separate Marine Corps, and Coast Guard, are necessary evils. Over the past decade, leaders of the US Navy and Coast Guard have advanced the concept, and some limited reality, of a “national fleet.”³⁷ In truth, the United States does not and will not wage war by service or by discreet geography but rather by inherently joint combatant commands. The country wages warfare holistically with its *armed forces*, not with its Navy, Army, Air Force, or Marine Corps. However, although modern warfare for the United States necessarily is a joint project, it does

have to be prosecuted in distinctive geographies, and the distinctions matter greatly. Neither Americans nor other people, realistically, can aspire to recruit, equip, train, and employ generic soldiers, warriors, or combat persons—pick your preference! Although warriors and other military personnel share features in common among the geographical environments, it remains a fact that military behavior differs radically from geography to geography. In other words, while the separate armed services constitute some organizational affront to the essential unity of warfare and war, more importantly they express inescapable material and consequential psychological truths.

Some air theorists have advanced the proposition that there is an “air-mindedness” that needs to be treated as a vital input to defense planning, military strategy, and operational designs.³⁸ This obviously self-serving belief happens to be true, as well as every bit as significant as air theorists insist. Indeed, the most persuasive and unbiased explanation of the worldviews of airpersons, soldiers, and sailors, is to be found in an outstanding short book written 40 years ago by an American rear admiral, J. C. Wylie.³⁹ He exposed the enduring reasons why the world as potential battlespace, its difficulties and its opportunities, looks very different to those who must function on land, at sea, in the air, or—today—in control of space power and cyber power. The United States is obliged to approach warfare holistically but also it has no option but to rely upon the expertise of military professionals who have no choice other than to be expert operators in one geography rather than others, let alone all five of them. And, as Wylie insisted, the world looks very different to those who must function in the mud of terrestrial terrain, on or under the uniformity of the sea, or over the heads of both.

The point that some critics of the Air Force have failed to grasp is that the “air-mindedness” that the USAF lives, breathes, and fosters, is not only a reflection of the semirecreational joy of flying—though this should not be denied—or of loyalty to institutional culture. In addition, far more important, there should be no dispute over the fact that the USAF ought to be trusted to comprehend aerial battlespace, if not always its terrestrial implications, better than the Army and the Navy. Of course, faulty service doctrine can impede, and has impeded, such comprehension. This is why the promotion of unsound doctrine is so damaging to the service in particular, as well as to the country’s strategic potency overall. The Air Force should learn from its history that when current doctrine hinders nationally

required performance, eventually it will be compelled to fall into line, regardless of its current credo.

Airpersons need to appreciate the challenge in a vital paradox. While, on the one hand, only they can be trusted fully to understand airpower's strengths and limitations in detail, on the other hand they are frequently mistrusted by soldiers and sailors because of their actual, perceived, or anticipated military and strategic parochialism. All one can say about this, really, is that each service, reflecting its particular duties and contexts, cannot help but filter data through its own geographical lens. This is just a fact of strategic life, and indeed of institutional loyalty and occupational culture. *To have an independent Air Force is an expression both of geostrategic reality and is the best way by far to ensure that the ever more critically significant aerial dimension to conflict is appreciated in a professionally expert way.* One need hardly add that service independence does come at some occasional possible opportunity cost in quality of jointness foregone. However, the potential cost of a shotgun multiple-marriage of the still fairly separate services would be truly enormous. If one wishes to advance the misuse of airpower, one could hardly do better, or worse, than recommend the institutional demise of the USAF.

Last but not necessarily least among the reasons why it is a fallacy to believe that the United States should not maintain a separate air force is the factor of morale—the human dimension. We humans, military folk probably more than most because of the unique demands of the profession, demand, even crave, clear identity. It is a source of particular pride to join, be initiated into, encultured, and looked after by an armed service. The key values are tradition, pride, and their product, morale. Given the potential material perils of the warrior's life, his psychology has always been critically important. Moreover, given also that warfare in nearly all its aspects essentially is a team effort, the strength of an individual's identification with the "team" is of fundamental moment. Today, all US service personnel are exactly that, players in a great joint enterprise. But, the physical and hence key psychological reality is that they have a particular military geographical orientation and hence unique military institutional affiliation; they have a military family, actually a cluster of family groups, greater and smaller. This matters for military performance; it is an eternal truth about "soldiering." The ancient Greeks knew it, as did the Romans, and so should we.

Fallacy Seven: *Airpower can never be other than a minor player in the conduct of COIN.*

Everyone agrees that good governance is key to COIN success. But what many scholars and officials neglect to mention is that *generally a COIN campaign is required precisely because good governance has been lacking*. In addition, not all textbooks on COIN explain as clearly as they should that such governance, though typically essential, cannot deliver political success in the absence of physical security for the bulk of the population. In other words, security from acute fear and political advantage are both vital and critically interlocked. Neither can succeed without the other. COIN does not work as a wholly military enterprise, but nor can it be treated as an all but exclusively political mission.

This is yet another fallacy that is apt to persuade because it contains some truth. Also, it sounds plausible with the image it conveys of firepower from the sky being applied without due care and discrimination against insurgents who often are indistinguishable from largely innocent, or even friendly, civilians. The claim is to the effect that whereas airpower today should be a force for military decision in regular conventional warfare, in COIN much, even most, of its potential benefits cannot be delivered. The very nature of COIN warfare, so the argument proceeds, denies airpower the kinds of targets against which it can be lethal. At a more fundamental level, whereas regular conventional warfare is won by defeating the reasonably symmetrical forces of the regular-style enemy, in COIN victory is won only by securing the support of a large majority among the general public. The military road to success in regular warfare is by a flexible mix of firepower, shock, and maneuver. COIN warfare, in the main, is radically different. We must add the qualifier “in the main” because it is easy to forget that insurgency is not synonymous with guerrilla warfare or terrorism. Both are only tactics, or styles, of combat. By definition, indeed insurgencies aspire to expand their scale of military behavior and “go regular” to achieve a decisive strategic and then political victory. This means that although insurgencies start small and highly irregular in style, if successful they will grow large and increasingly regular. It follows that COIN is not by definition a conflict only with an enemy committed narrowly to irregular forms of action.

Despite the important qualification in the paragraph immediately above concerning the “mixed” character of many insurgencies—with regular and irregular styles of fighting—it is generally true to claim that COIN re-

quires the defeat of a guerrilla/terrorist foe. Two facts provide the highly plausible basis for the fallacious belief that airpower can only be a minor player in COIN. First, it is the case that COIN must principally be a political venture—so airpower is at a discount simply because it is a military tool. Second, airpower is a military tool inherently incapable of engaging “up close and personal” with enemies and actual and potential allies amongst the people on the ground.⁴⁰ In combination, these twin blows suffice to make a potent generic claim for airpower’s minor status in COIN.

Although this analysis explains and exposes this fallacy for the error that it is, there should be no doubting the reality of COIN’s contexts that must privilege land power, really ground power, over airpower. Though given the necessity for a joint, even integrated, ground-air approach to COIN’s military dimension, one needs to be careful lest the false notion is conveyed that ground and air are competitors rather than mutually dependent partners. Contentedly following Billy Mitchell’s lead, this study takes a broad view of the nature of airpower.⁴¹ For our purposes here, at least, airpower is understood to mean the potential military and strategic effects of anything useful that can fly. So, airpower can refer to the inherent capabilities of the diverse air instrument, as well as to its consequences in application. The gloriously mobile strength of airpower “works” kinetically as well as logistically; it gathers intelligence, and it evacuates the wounded; it shifts troops and removes them; it performs direct support to friendly assets in half a dozen ways and indirect in a dozen or more. Save very rarely, airpower will be the supporting rather than the supported force in COIN.⁴² However, to use that familiar formula is to risk misleading the reader. The supporting airpower is, by definition, the junior partner in COIN.⁴³ But, that subordinate role, with its basketful of tasks, has become literally essential. To refine the point, while many states in the past have conducted COIN with zero or very poor aerial assets, the United States today and tomorrow could not even conceive, pragmatically, how to do so. America is uniquely air-dependent in its way of COIN, but it is far from lonely. Every country in the world that has a COIN problem and owns some airpower finds ways to employ its asymmetric (over insurgents) capability more or less usefully.

It may or may not be convenient to make a sharp conceptual and operational distinction between “supported” and “supporting” forces, but this idea is unhelpful in its ability to conceal the necessity for the contribution of the supporting element. Airpower for COIN in the 2000s is not just

“nice to have,” it is absolutely essential. To register this empirically based claim is only to recognize operational realities; it is not to argue with the proposition that COIN inherently is ground- and people-centric.

There is a danger that in analyzing airpower somewhat abstractly, as here, postural detail that really matters may be lost from sight. Airpower is not a uniform capability. A country may enjoy a sound understanding of what airpower should be able to accomplish, either as a primarily supporting or supported force. But countries do not fight with concepts, sound or otherwise. They fight with actual aircraft and with the infrastructure to keep those aircraft and their replacements flying. An inadequate air posture will always be able to frustrate what otherwise appears to be a good idea. For COIN support, it is not the case that an air force judged good enough to fight “the big one” assuredly will be good enough to cope with much lesser challenges. In some significant ways, the proper diverse employment of airpower for COIN is every bit as challenging as the task of preparing for a great-power conflict. Suboptimal equipment for airpower in COIN must lead to a suboptimal contribution to the ground-air team effort, notwithstanding the professional skills and courage of airpersons. Nonetheless, even the ill consequences that flow from the self-inflicted wound of poor, or just unlucky, choices in aerial force structure fade into relative insignificance when they are compared with the harm inflicted by incorrect strategy—military and grand.

Victory is improbable if one asks airpower to perform tasks for which it is not well suited against an intelligent and competent enemy. Airpower has qualities that politicians tend to find uniquely appealing. The more extreme advocates of strategic airpower, perhaps of airpower as the dominant military source of strategic effect, find themselves in mutually dangerous alliance with policy makers in search of swift and relatively economical solutions to messy and complex problems. Properly conducted, COIN is always untidy and requires protracted military campaigning in the context of what the British government today likes to call a “comprehensive approach,” one which combines political, military, and economic efforts. It is tempting to believe that an air-led COIN effort, relying primarily upon kinetic effect, will be able to defeat insurgents. Known or suspected deficiencies in one’s ground power will be sidelined, and casualties on both, or all, sides should be modest. The grand political, strategic, and military narrative of the Israeli adventure in Lebanon in 2006 illustrates near perfectly why it is essential for US security that fallacies about airpower in

general, and US airpower in particular, should be recognized, exposed, understood, and avoided.

It may be important to mention a pathology not of airpower itself but of its misuse. Because the air instrument is swift in execution, lends itself to overoptimistic expectation, risks few American lives, and—in the US case, these days, at least—almost invariably is available, it is a constant temptation. When politicians want to “do something,” most especially when they need to be perceived as doing something, and when other non-military and military options either are not available or could only work slowly and uncertainly, it is a great temptation to reach for one’s airpower “gun.” Airpower usually will be the first preference for US policy makers who feel the need to make a bold, hopefully decisive, statement through action. Alas, too often, it is highly expedient to resort to kinetic airpower as the default option; it is the expedient tool for those who are impatient or desperate. Of course, there are occasions when kinetic airpower should be used. This discussion is not in any sense intended to offer blanket condemnation. Because American airpower, necessarily and advantageously, is all but ubiquitously available to lead or support military action, it cannot help but invite and produce addiction. None of these comments contradict my belief that the merits of a “gently, gently” approach to “war amongst the people,” particularly to COIN, can be overstated. As always, actual behavior, in contrast to theory, principle, and some myths, has to be appropriate to the real-time situation.

It is easy to forget, for example, that the dominant British imperial approach to COIN was known, for excellent reasons, as “burn and scuttle.” A punitive expedition, small or large, would teach the locals the errors of antisocial insurgent behavior. It is not politically correct to admit this in polite Western circles, but from the bad old days of colonial “policing” through today in Afghanistan and Iraq, there are times when it is strategically highly desirable to damage property and kill people. Regrettably, we are talking about warfare, and violence resides at the core of warfare’s nature.⁴⁴ I should not need to add that the violence should never be other than strictly instrumental. It ought not to become merely expressive, let alone recreational, for those exercising it, but once the key is turned for its employment, we humans inalienably are in perilous terrain. Potential pathologies lurk to ambush what began as sound strategic behavior.

Because COIN can be exceedingly frustrating and demanding of high, even some rare, skills tactically on the ground, it is only sensible to reach

for airpower in search of compensation for otherwise missing effectiveness. In common with the Special Operations Forces, airpower is always liable to be charged with tasks that either it cannot perform well or that it ought not to be required to attempt at all.⁴⁵ What are those tasks? The answers derive both from airpower's inherent strengths and limitations, but most significantly, of course, from the actual condition of friendly airpower in specific historical contexts. General theory has its place, but it must always be expressed in terms suitable to distinctive historical circumstances. Strategy, including strategies for airpower, is always particular in detail in its application at specific times, in distinct places, and by unique militaries. Airpower is a wonderfully generic concept, but it is anything but generic in its material reality from state owner to state owner.

Fallacy Eight: *The twenty-first century is the missile, space, and cyberspace age(s); airpower is one of yesterday's revolutions.*

This claim points to the still underacknowledged fact that the emergence, maturing, and near perfection of airpower in the twentieth century was itself, and required, the most radical change in warfare in the period. The twentieth was the air century, notwithstanding the abrupt atomic, then nuclear, facts of the 1940s and beyond. The airpower revolution in warfare, though nearly 100 years in process, is still in some senses incomplete. If this were not so, how could I have written this study? In the late 2000s, controversy continues to attach to issues such as the relative utility of airpower vis-à-vis every other kind of military power, and those other kinds have expanded of recent decades to include space and cyber instruments. This fallacy points with unerring accuracy to the readily demonstrable facts that ours is not only the "air age" and the "nuclear age;" also, it is the missile, space, and information ages. And, as one should expect, the more recent technological arrivals are generically more exciting, being new, more challenging to understand, and possibly more deadly in use than are "yesterday's" military tools. The fallacy in question here pertains to the claim that airpower is becoming obsolescent to the point of being obsolete for a growing number of mission types. What is wrong with the assertion is the prediction that, in effect, airpower is being squeezed out of playing valuable military roles. Unmanned aerial vehicles (UAV), missiles of all kinds, space systems, and computers, are reducing the significance of airpower in its several manifestations.

The error that fuels this fallacy is the mistaken conviction that the military relevance of manned airpower is being overtaken by technology. It is not. While it is true that some missions can and should be performed by UAVs, ballistic missiles, or orbiting spacecraft, there is no persuasive case for a need to anticipate the demise or even the substantial retirement of manned military aircraft. Ironically, perhaps, the same technologies that appear to undermine the need for manned flying vehicles render manned aircraft much more effective. Yet again in this discourse, in this case regarding *manned* airpower, controversy is foolishly framed in terms of either/or when it ought to approach the matter as both/and. Yes, there are legitimate issues to analyze and debate over the future of airpower, especially manned airpower, in particular roles. But that analysis and debate should be conducted in full awareness of the complementarities of the technologies and vehicle types under discussion.

To repeat what by now must read as a familiar refrain, the importance of the subject addressed in this concluding fallacy could hardly be higher. At issue here is nothing less than the future air posture, space posture, and cyber posture, of the world's only true air power, the United States. Should the F-22 and the F-35 be regarded as the last generation of manned fighter aircraft? Does the United States require a follow-on, long-range bomber to succeed the venerable B-52, the middle-aged-plus B-1, and the B-2? Should we be thinking of some approximation to a flying "missile truck," generically akin to the naval concept of an "arsenal ship"? Are we entering, or have we entered already, the final phase of the era of military manned aircraft in some key roles? These are large questions of great importance, which this study cannot answer with absolute confidence. Nonetheless, I am optimistic about the future of manned military aircraft for a number of strong reasons. Although these reasons are not advanced as would-be eternal truths, I do believe them to be more than marginally persuasive.

First, menacing air defense contexts in the future can be transformed by defense suppressive measures. Warfare is always a duel. It is necessary and useful not to forget the growing problems posed by state-of-the-art air defenses. But it is scarcely less necessary and useful to remember that not all air defenses will be state of the art, and even those that are may be taken down, at least tamed, by smart tactics and technologies. Just because the global military environment contains weapon systems lethal to particular elements in our arsenal, it need not follow that our nominally threatened forces are in any sense thereby rendered obsolete. For example, antiaircraft

artillery appeared very early in the history of airpower, but scarcely ever has it achieved a tactical or technical dominance. Dedicated antitank weapons, similarly, followed closely on the tracks of the first tanks, but tanks remain with us. The same reality has applied at sea. Submarines, for example, have yet to negate the value of a surface fleet; they can just make its operations more hazardous.

Second, while it is true in fact, and potentially in fact, that space and cyberspace could perform some missions currently assigned to airpower, it is essential to recognize the eternal truth that no geographical environment can be a sanctuary if it is exploited for strategic advantage. Cyber warfare already is a reality. It figured significantly in Operation Iraqi Freedom in 2003,⁴⁶ it is a minor but continuous dimension to great-power rivalry today, and we can be absolutely certain that it will figure in a major way in future conflicts, be they largely regular or irregular in character. It is plain to see that cyberspace is not a sanctuary today for any belligerent. Furthermore, orbital space, certainly space systems considered in all three of their segments (satellites in orbit, communications among them and to and from ground facilities, and ground facilities themselves), inevitably is going to join the other four geographies in the great column of “battlespace.” To summarize, although it is sensible to anticipate growth in the lethality of late-model air defenses, there are no very good grounds for pessimism over the prospects for US airpower to achieve tolerable survivability by tactical skill and technical excellence. Also, control of the space and cyberspace environments similarly will have to be defended. This is integral to the logic, even the lore, of warfare as a duel—past, present, and future.

Third, missiles tend to be relatively cheap when compared with manned aircraft. But this general truth can easily mislead. Missiles, certainly ballistic missiles, self-destruct in their suicidal missions; aircraft do not. How do we do an intelligent cost-benefit analysis comparing reusable with one-shot weapons? Also, while missiles have some obvious advantages—no loss of morale, for example—and, generally speaking, they are immune to the constraints of weather, they are far from invulnerable. This is indeed the missile age, but increasingly it will be the missile-defense age also. Ballistic missiles, in common with orbiting spacecraft, are obliged to travel as the laws of physics command. Since those laws are common knowledge, the trajectories of ballistic missiles are predictable. At least they are predictable if the adversary has the technical means to observe the facts of their launch and early courses. In principle, missiles—ballistic and cruise—as well as satellites, can

be programmed or commanded to maneuver, but this capability is technically demanding and operationally costly in loss of payload.

For logistic functions, manned aircraft face zero competition from missiles and spacecraft. This situation is likely to continue indefinitely. Given that it costs \$20,000 plus to hoist a pound of weight into orbit, space power has a way to go before it can even begin to emerge as a long-haul carrier of heavy or bulky items. Missiles, transorbital and suborbital, are simply not in the technical-tactical frame to compete with airlift. Missiles can travel more rapidly, even as accurately, as can aircraft, but generically there are huge pragmatic constraints on the spectrum of their utility. For an overall judgment, missiles lack the flexibility of manned aerial vehicles. One day, UAVs may be genuine rivals to manned aircraft for nearly all intelligence gathering and strike roles, but I strongly suspect that major air powers will continue to favor retention of the flexibility and adjustability to unexpected circumstance inherent in the human presence in the cockpit.

Fourth, I will surrender to temptation and claim that even in this age of fairly mature long-range missile technologies; if the intercontinental manned bomber did not exist, the United States would need to invent it. The ability to reach out and touch foes literally anywhere on Earth—with aerial refuelling and some support from forward basing, though *from North America if need be*—with the flexibility provided by manned aircraft is valuable beyond strategic price. In all except for an extreme nuclear scenario, bombardment from altitude nowhere near constitutes the whole of warfare, let alone the whole of war. But such bombardment is a vital arrow in America's grand-strategic and military-strategic quivers. For reasons of survivability, prelaunch and en route, the United States should continue to find strategic value in an ICBM force. However, that force will not often compete plausibly with manned aircraft to be the chosen instrument for very long-range bombardment. Aircraft are not associated as closely as ICBMs with nuclear missions; they are reusable assets and can execute tasks subject to real-time guidance for flexibility.

Fifth, airpower and space power are in modest measure rivals, but to a far greater degree are complementary. What they are not are two geographically adjacent instruments that are in the lengthy process of effecting a fusion that offends against the laws of physics. In other words, airpower plus, or multiplied by, space power, does not equal aerospace power. Aircraft inherently enjoy complete freedom of maneuver, subject only to the constraints of fuel-weight, gravity, and human operator tolerance. Spacecraft,

by contrast, enjoy no freedom of maneuver in orbit, save at a high cost in payload for fuel and (admittedly small) engines. The relative military and strategic value of aircraft, manned and unmanned, and spacecraft does not admit of a general analysis and answer. This vital subject is thoroughly mission and military context specific. For high-resolution imagery needed on short notice, for example, reconnaissance satellites in low Earth orbit may not be well positioned to respond. With reference to the possible military value of spacecraft as providers of kinetic support for terrestrial combat, gravity would be our friend. To date, though, even if the political arguments against “weaponizing” space could be overcome, there is no compelling reason to do from orbit what we can do far more cheaply and flexibly from Earth. By way of a closing thought, US preparation for space warfare in all its aspects—to, in, and from orbit—currently is so immature, in good part because our theory and doctrine for space power still leaves so much to be understood and agreed, that it is premature to advance far into the zone of considering air/space competition. Overall, it seems all but self-evident that for the US armed forces airpower, space power, and cyber power must be approached as true partners, not as rivals.

America, The Air Power

Airpower is America’s sharpest sword in regular conventional, though probably somewhat asymmetrical, warfare. When the country chooses to wage warfare against enemies who fight irregularly, it is choosing a military context wherein its most deadly weapon will have only some discounted value. If warfare against irregulars is judged necessary by US policy makers, then so be it. But, those politicians need to understand that in wars where airpower cannot be the dominant tool in the military tool bag, the United States may well prove to be fatally short of the means and methods essential for sufficient strategic advantage. When airpower leads, which is to say in regular warfare, the battlespace is healthily tilted, probably precipitously, in America’s favor.

In this study we deployed eight fallacies about airpower for the overarching purpose of improving understanding of what US airpower generally can do well and also what it is likely to do poorly. Above all else, the story here, unremarkably, has emphasized the necessity for a truly joint, even integrated, approach to warfare. This is not, at least should not, reduce to the banality that “each military instrument in its way is

strategically essential,” true though such a platitude happens to be. Rather should the claims be registered that airpower: (1) is America’s prime military advantage, a benign condition that now has endured since 1943–44; and (2) that the more relevant militarily is airpower in the unique context of a particular conflict, the more probable is it that American arms will win. These claims should not be read as demeaning to the US Army and Navy. The former noble institution, today and in the future, more and more must be the *supporting*, rather than the *supported*, force in regular conventional warfare. In warfare against insurgents, the reverse is true. As for the US Navy, its vital contribution to maritime strategy, and even its residual interest in naval strategy narrowly, is all but wholly tightly meshed with a pervasive aerial dimension. For the United States, at least, to try to distinguish between sea power and airpower in the twenty-first century would be an exercise in futility. The details have changed radically, but the claim just made applied no less to the realities of US military power in the 1940s than it does today. The US Navy and Marine Corps “do” airpower of characters and in quantities that the navies of other states cannot even begin to emulate. If such states need to compete with, perhaps even fight, the United States at sea, they must seek means and methods highly asymmetrical to those favored by America’s sailors and sailor-airpersons. It may be useful to contextualize my arguments in this article by offering the reminder that it has been unknown in modern times until now for a state to be militarily dominant in all geographies. The United States cannot always translate this dominance into decisively favorable strategic effect for true political victory, but the facts of the current US superiority are both readily grasped and quite politically appalling and unacceptable to the country’s major state rivals. Hopes to the contrary are almost certain to be revealed by future events to be just that, only hopes. The point of note is that the United States today is not only the world’s first air power, also it is the world’s dominant military sea power, and it fields the finest army. The US lead in space power is perhaps of 10 to 20 years’ duration, though its neglect of dedicated active means to achieve and sustain space control should be cause for anxiety. As for cyber power and its belligerent exercise in offense and defense, no one really knows how the United States would fare against a skilled opponent. The unarguable success of US cyber warfare against Iraq in 2003 should not be permitted to fuel complacency. In military conditions characterized by overwhelming regular conventional combat, it is much easier and cheaper for America’s enemies to wage

effective cyber warfare than for them to pose credible threats in the air, at sea, on land, or in orbit. Quite what an enemy, in state or nonstate form, would do strategically with technical success in cyber disruption is somewhat opaque at present.

To reveal and demolish some fallacies about airpower is not much more challenging than shooting fish in the proverbial barrel. However, because the fallacies examined here generally have contained a germ or two of merit, apparent and otherwise, they warrant description as plausible fallacies. To conclude this analysis on a positive and constructive note, what follows are corrected statements of the fallacies.

1. *All of our geographically specialized military instruments, including airpower, are inherently strategic in the effect that they have upon the course of history.* It makes no more sense to talk about strategic airpower than to discuss strategic land power, sea power, space power, or cyber power. It is the consequences of military behavior that are “strategic,” not the forces themselves.

2. *Airpower has never been driven forward by a strategically and militarily mindless technological momentum.* Ideas, theory, and doctrine have always been in the cockpit (whether or not the aerial vehicle was ready to fly).

3. *Airpower is not only about targeting, as anyone who recognizes the variety of essential roles performed by aircraft in warfare should hardly be able to fail to appreciate.* The very nature of airpower ensures that targeting for kinetic effect has to be of prime importance among the instrument’s ways to contribute strategically to a conflict.

4. *Whether airpower is subordinate to land power, or vice versa, must depend upon the war’s overall military-strategic context.* If its character is largely regular, then today and tomorrow it must be airpower that should be the supported force. The reverse has to be true in war with a largely irregular military character. These key points granted, it is really more sensible not to contrast land power and airpower, but rather to consider them inherently complementary dimensions of variable relative significance within a single military, strategic, and political effort.

5. *The theory of strategic airpower is only flawed if one elects to identify it strictly with the overstated claims of some “classical” writers on airpower.* Sensibly crafted instead, the theory of strategic airpower is entirely sound. It should state that employed either as a weapon independent of land- or sea-focused forces or as an enabling agent for, perhaps even components of,

land power and sea power, airpower generates strategic effect on a conflict. By and large, airpower used independently is not able to deliver decisive military and strategic victories. However, it has demonstrated the ability to decide which combatant will win. It should be noted that there is no reason in principle why airpower can never aspire to secure a decisive victory by its own unaided effort.

6. *The institutional independence of the USAF, in the context of a legally and politically superior Department of Defense, is best described as a regrettable necessity.* It is regrettable that the essential unity of war cannot be matched with a similar unity of military power. The fact is that the skills necessary for warfare vary with geography. It is true that air-minded people are inclined to register military and strategic claims for airpower's potency that may seem to exceed the bounds of plausibility to those of a non-air persuasion. However, the undoubted costs of service partiality fade from sight when they are compared with the price likely to be paid for the misuse of airpower by non-airminded military cultures. Given the primacy of America's aerial tools among its military instruments, there is no prudent alternative to ensuring retention of the US airpower advantage through sustainment of a dedicated Air Force.

7. *In COIN today, airpower cannot be the leading edge to the military dimension, but it will always be quite literally essential.* COIN is inherently land-, indeed ground-centric in nature. But this geostrategic and tactical fact does not mean that the varieties of airpower that support the ground effort can accurately or helpfully be described as being only of minor importance.

8. *The twenty-first century continues the air age that began in December 1903. The appearances of ballistic missiles, spacecraft, and computer-driving cyber power have not and do not threaten to oblige us to retire the airplane.* This new century plainly will be one friendly to UAVs, but this condition does not mean that manned aircraft are facing, or will face, bloc obsolescence as "yesterday's technology." The manned aircraft simply is too useful, too adaptable and flexible, to be abandoned. The future of manned aircraft is completely secure, even though some of its roles in some political and military contexts increasingly will be assumed by UAVs. For the most obvious example, persisting surveillance can be provided far more effectively by UAVs and, of some kinds, by satellites than it can by manned aircraft. This undeniable reality does not ring the death knell for manned aircraft, though,

even in surveillance, reconnaissance, and strike-reconnaissance roles. Stated in the most basic terms, the manned aircraft is just too flexible, and therefore useful, to be phased out of the defense posture. **SSOQ**

Notes

1. In 1852, Leo Tolstoy wrote: "History is nothing but a collection of fables and useless trifles, cluttered up with a mass of unnecessary figures and proper names." Quoted in Isaiah Berlin, *The Hedgehog and the Fox: An Essay on Tolstoy's View of History* (New York: Mentor Books, 1957), 24–25.

2. Carl H. Builder, *The Masks of War: Military Styles in Strategy and Analysis* (Baltimore: Johns Hopkins University Press, 1989), is classic. His later foray into the perilous realm of military culture and ideas is helpfully targeted explicitly on airpower and the value of theory: Carl H. Builder, *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force* (New Brunswick, NJ: Transaction Publishers, 1994). These are both excellent studies with enduring merit.

3. Phillip S. Meilinger, *Airpower: Myths and Facts* (Maxwell AFB, AL: Air University Press, December 2003).

4. Sun Tzu, *The Art of War* (circa 400 BC), translated by Ralph D. Sawyer (Boulder, CO: Westview Press, 1994), 179.

5. Harold Lasswell, *Politics, Who Gets What, When, How* (New York: Peter Smith, 1950).

6. Colin S. Gray, *The Airpower Advantage in Future Warfare: The Need for Strategy*, Research Paper 2007-2 (Maxwell AFB, AL: Airpower Research Institute, Air University, December 2007), 11–13.

7. Berlin, *The Hedgehog and the Fox*, presents an unrivalled brief discussion of comprehensive theory versus many theories, or no theories. He quotes the words of Greek poet Archilochus: "The fox knows many things, but the hedgehog knows one big thing" (p. 7). Berlin writes: "If we may recall once again our division of artists into foxes and hedgehogs: Tolstoy perceived reality in its multiplicity, as a collection of separate entities round and into which he saw with a clarity and penetration scarcely ever equalled, but he believed only in one vast, unity whole" (p. 62; emphasis added). I must confess to being a strategic hedgehog. See my forthcoming effort to present a comprehensive theory of strategy, *The Strategy Bridge*.

8. See the fine studies in Robin Higham and Stephen J. Harris, eds., *Why Air Forces Fail: The Anatomy of Defeat* (Lexington: University Press of Kentucky, 2006). For a little useful context, it is well to recognize that books can be written with such titles as "Why Armies Fail" and "Why Navies Fail." It is easy for the unwary to believe that failure is somehow more of an airpower than a land power or sea power issue. Such a belief is, of course, ridiculous. Failure happens, period. There needs to be a book with the title "Why Air Forces Succeed."

9. Davic MacIsaac claims plausibly that the authorial parent of "airpower" as a single word, a form that seems to connote a sense almost of incantation, may have been invented by Maj Alford Joseph Williams in his *Airpower* (New York, 1940). "Voices from the Central Blue: The Air Power Theorists," in Peter Paret, ed., *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986), 627.

10. See Carl von Clausewitz, *On War*, ed. and trans. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 128, 177; and Colin S. Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999), 17–23.

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11. See David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post–Cold War Era*, MG-405-AF (Santa Monica, CA: RAND, 2006).

12. See Philip Anthony Towle, *Pilots and Rebels: The use of aircraft in unconventional warfare, 1918–1988* (London: Brassey's, UK, 1989); James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003); and Alan J. Vick et al., *Air Power in the New Counterinsurgency Era: The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND, 2006).

13. In a previous publication for the Airpower Research Institute, I deployed contrasting statements on the relationship between ideas and technology for airpower. Gray, *Airpower Advantage*, 8–10.

14. Especially useful overviews of the history of airpower theory include MacIsaac, “Voices from the Central Blue,” and the first-rate studies in Phillip S. Meilinger, ed., *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell AFB, AL: Air University Press, 1997). The latter is essential reading.

15. See Higham and Harris, eds., *Why Air Forces Fail*; James Clay Thompson, *Rolling Thunder: Understanding Policy and Program Failure* (Chapel Hill: University of North Carolina Press, 1980); Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: Free Press, 1989); and Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996).

16. Stephen Budiansky, *Air Power: From Kitty Hawk to Gulf War II: A History of the People, Ideas and Machines that Transformed War in the Century of Flight* (London: Penguin Books, 2003), is an exemplary popular history that weighs in heavily on airpower's necessarily essential and enabling technological dimension. Budiansky can be complemented by the outstanding scholarly yet practical-minded study by pilot-historian-analyst Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, NY: Cornell University Press, 2000).

17. Lambeth, *Transformation*.

18. Giulio Douhet, *The Command of the Air* (1927; New York: Arno Press, 1972), 50.

19. *Ibid.*, 59.

20. John A. Warden III, “Employing Air Power in the Twenty-first Century,” in Richard H. Shultz Jr. and Robert L. Pfaltzgraff Jr., eds., *The Future of Air Power in the Aftermath of the Gulf War* (Maxwell AFB, AL: Air University Press, July 1992), especially 64–69.

21. For the most classic of examples, one illustrating the positive and negative aspects of air mobility, consider the French experience under siege at Dien Bien Phu in March–May 1954. The French deployed by air two parachute brigades (seven battalions) and 11 infantry battalions to this *base aero-terrestre* (air-ground base), but, to their surprise, they lacked the ability to support the besieged garrison or to extract the survivors as the battle went against them. Martin Windrow, *The Last Valley: Dien Bien Phu and the French Defeat in Vietnam* (London: Weidenfeld and Nicolson, 2004), is the most recent and best account. Air mobility enables tactical, operational, and strategic boldness that can, with hindsight, prove reckless. As all prudent air theorists and strategists insist, the exact utility of airpower is always highly situational. General truths are subject to contextual exceptions. A well-executed period piece, written by an officer who served in Vietnam with the 1st Cavalry Division, is John R. Galvin's *Air Assault: The Development of Airmobile Warfare* (New York: Hawthorn Books, 1969). Appropriately enough, the book's foreword was written by Gen James “Jumping Jim” Gavin.

22. Vick, ed., *Airpower in the New Counterinsurgency Era*.

23. To marry two vital points made by Clausewitz: “War, therefore, is an act of policy,” but also it is “an act to compel our enemy to do our will” (emphasis in the original). Clausewitz, *On War*, 87, 75. Not all violence is warfare, but all warfare entails violence.

24. See Veist, ed., *Rolling Thunder in a Gentle Land*. Powerful revisionist arguments are presented in Mark W. Woodruff, *Unheralded Victory: Who Won the Vietnam War?* (London: Harper Collins Publishers, 1999); C. Dale Walton, *The Myth of Inevitable U.S. Defeat in Vietnam* (London: Frank Cass, 2002); and Mark Moyar, *Triumph Forsaken: The Vietnam War, 1954–1965* (Cambridge: Cambridge University Press, 2006).

25. See Johnson, *Learning Large Lessons*.

26. See Lambeth, *Transformation*; and *Airpower Against Terror*.

27. This sadly classic lesson in military prudence was demonstrated for all time in Mogadishu, Somalia, on 3 October 1993. See Mark Bowden, *Black Hawk Down* (London: Bantam Press, 1999). From the minor to the major in scale, the worst historical case of the misuse of air mobility was the dropping of the British 1st Airborne Division near the city of Arnhem in Holland in September 1944 for the purpose of seizing and holding the Rhine bridge (Operation Market Garden). It is one thing to insert an airborne force; it can be quite another to lift them out of trouble. Paratroops were popular, even fashionable, in the 1940s and 1950s. The potential for disaster has always been severe for these elite troops.

28. Richard B. Andres, “Deep Attack against Iraq,” in Thomas G. Mahnken and Thomas A. Keaney, eds., *War in Iraq: Planning and Execution* (Abingdon, UK: Routledge, 2007), 69–96, presents an impressive case for airpower’s enablement of the rapid victory on the ground.

29. It is no direct part of the mandate for this study to discuss the future of US space power. Suffice it to say that I am greatly troubled by the vulnerabilities of our essential space systems. This persisting condition is a gigantic irresistible temptation to any competent state opponent of the United States. Prudent preparation for space warfare in all its dimensions is a vital necessity for US and more general international security in the twenty-first century. See Colin S. Gray and John B. Sheldon, “Spacepower and the Revolution in Military Affairs: A Glass Half-Full,” in Peter L. Hays et al., eds., *Spacepower for a New Millennium: Space and U.S. National Security* (New York: McGraw-Hill, 2000), 239–57. Also see Steven Lambakis, *On the Edge of Earth: The Future of American Spacepower* (Lexington: University Press of Kentucky, 2001); and John J. Klein, *Space Warfare: Strategy, Principles and Policy* (Abingdon, UK: Routledge, 2006).

30. See Andres, “Deep Attack.”

31. Gian P. Gentile, *How Effective is Strategic Bombing? Lessons Learned from World War II to Kosovo* (New York: New York University Press, 2001), is exceptionally well researched.

32. Douhet, *Command of the Air*; Hugh Trenchard, “The War Object of an Air Force” [May 2, 1928], in Gerard Chaliand, ed., *The Art of War in World History: From Antiquity to the Nuclear Age* (Berkeley: University of California Press, 1994), 905–10; Idem, “Air Power and National Security” [August 1946], in Eugene M. Emme, ed., *The Impact of Air Power: National Security and World Politics* (Princeton, NJ: D. Van Nostrand, 1959), 192–200; William Mitchell, *Winged Defense: The Development and Possibilities of Modern Air Power—Economic and Military* (1925; New York: Dover Publications, 1988); John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, DC: Pergamon-Brassey’s, 1989); Idem, “Employing Air Power in the 21st Century.” Useful secondary sources include MacIsaac, “Voices from the Central Blue”; Meilinger, ed., *Paths of Heaven*; idem, *Airmen and Air Theory: A Review of the Sources* (Maxwell AFB, AL: Air University Press, 2001); and Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914–1945* (Princeton, NJ: Princeton University Press, 2002).

33. John Keegan, quoted in Lambeth, *NATO’s Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND, 2001), 220, no.4.

34. Warden, “Employing Air Power,” 65.

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35. See Lambeth, *NATO's Air War for Kosovo*; and Ivo H. Daalder and Michael O. Hanlon, *Winning Ugly: NATO's War to Save Kosovo* (Washington, DC: Brookings Institution Press, 2000).

36. See Builder, *Icarus Syndrome and Masks of War*.

37. The US Navy's capstone strategy document refers to the National Fleet Policy as well as to the "Sea Services" as a unitary maritime conception. The Navy, Marine Corps, and Coast Guard are all authors of *A Cooperative Strategy for 21st Century Seapower* (October 2007).

38. No less an Airman than Gen Hap Arnold himself blessed the concept of "airmindedness." Charles J. Dunlap Jr., "Developing Joint Counterinsurgency Doctrine: An Airman's Perspective," *Joint Force Quarterly*, no. 49 (2nd qtr., 2008): 86–92.

39. Wylie, *Military Strategy*, chap. 5.

40. This claim may seem to be refuted by the capabilities of rotary-wing aircraft. However, even these flexible machines, albeit often locally welcome, have a separating effect in the relationship between civilians and the COIN effort.

41. Mitchell, *Winged Defense*, xii, 3–4.

42. See Corum and Johnson, *Airpower in Small Wars*.

43. It is the opinion of this author that, notwithstanding its many virtues, the new COIN manual of the US Army and Marine Corps is notably thin in its accommodation of the air dimension. Airpower in COIN is relegated to appendix E. This is unfortunate, both for the gratuitous limitation it imposes on presentation of an inherently joint subject and probably even more for the message that it appears to send. A joint, even integrated, COIN capability should not be relegated to an appendix. Perception matters. See US Army and Marine Corps, *The U.S. Army and Marine Corps Counterinsurgency Field Manual*, U.S. Army Field Manual (FM) No. 3-24, Marine Corps Warfighting Publication No. 3-33.5 (Chicago: University of Chicago Press, 2007). Dunlap, "Developing Joint Counterinsurgency Doctrine," does not pull many punches in its airman's critique of FM3-24.

44. Ralph Peters, "In Praise of Attrition," *Parameters* 34, no. 2 (Summer 2004): 24–32, says what needs to be said, no matter the offense it must cause to decent liberal opinion. War is violence, and COIN, at least in part, is warfare.

45. I pursued the subject of airpower's inherent strengths and limitations in my *Explorations in Strategy* (Westport, CT: Praeger Publishers, 1998), chap. 4.

46. See Andres, "Deep Attack." The cyber dimension to Operation Iraqi Freedom is nowhere near as well known as it deserves to be.

Living in Interesting Times

The Economics of a Chinese Currency Attack

Jeffrey E. Haymond, Colonel, USAF

What really matters . . . is the strength of the currency. Britain has nuclear weapons, but the pound is weak, so everyone pushes it around.

—John F. Kennedy

SEVERAL LARGE near-peer competitors, such as Russia and China, have amassed large levels of dollar-denominated foreign exchange reserves. This raises concern that these states could deliberately sell off assets to harm the dollar's value. Currency attacks have historically been a part of warfare, and the recent advent of nation-states that have large reserves suggests it is possible the United States could face this threat. Contemporary public discussion has often lacked depth and been at one of two extremes: either (1) China could destroy the United States if it chose to sell off its treasuries, or (2) the Chinese would lose so much they would never undertake a currency attack. This article takes a detailed look at China's economy to determine the plausibility of a currency attack against the United States.

There are many conflating economic issues surrounding a currency attack, such as the perceived overvaluation of the dollar and its status as the world's primary reserve currency. The analysis herein suggests that large dollar reserves are sufficient to enable a currency attack, independent of the valuation of the dollar or its status as the world's reserve currency. The economic reasons for China to hold large foreign exchange reserves are central to our conclusions; these are found to be independent of any malicious intent towards the US dollar.

A currency attack on the dollar is plausible, with possible devastating effects if not effectively countered. However, an attack is extremely improbable due to the costs an attacker would face and can be effectively countered

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with adequate preparations. Given the speed of modern financial markets, these preparations must be made in advance; it is doubtful an ad hoc response would be either a sufficient or an effective deterrent.

As Chinese imports to the United States have dramatically risen, the value of China's currency is increasingly contentious, with Congress periodically threatening trade sanctions unless China's currency, the *renminbi* ("people's currency"), is revalued.¹ While the *renminbi*'s value is controversial due to its alleged impact on US jobs and trade deficit, another currency issue is emerging as perhaps even more serious: the large dollar-denominated reserves held by China's central bank, the Peoples Bank of China (PBOC), could be sold in an attack on the US dollar. China's state media refer to this as the "nuclear option," and it has even President Bush talking. He is not alone; the subject can yield over 2.5 million hits on Google.² Yet finding a rigorous analysis is difficult; most discussions resort to a superficial "that would never happen" or "China could destroy us." This article addresses that shortcoming by providing an economic review of a currency attack and what can be done to prevent one.

Sterilization ensures that dollars coming into China do not lead to inflation. As Chinese exporters receive dollars in exchange for goods, they are required to deposit those with a state bank, which the PBOC purchases with *renminbi*. To avoid the *renminbi* being used by the banks as additional reserves (which would expand the money supply and lead to inflation), the PBOC sells "sterilization" bonds to the banks to soak up the excess liquidity. This process is used by many of the Asian tigers to prevent their currencies from rising against the dollar without creating widespread internal inflation.

The issues of currency manipulation and attack are related; the process of *sterilization* used by China to avoid currency appreciation leads the PBOC to hold large dollar reserves, which could be used to attack the value of the dollar. Chinese investment in dollar assets lowers US interest rates but increases US dependence on foreigners.³ While Japan has held large dollar reserves for quite some time, it is a US ally. The last decade's commodity boom and dramatic growth of East Asia, in concert with reduced US savings, has driven near-peer competitors, such as Russia and

China, to acquire large dollar denominated foreign exchange (FX) reserves as well. The dollar would be significantly pressured if China, Russia, or the Gulf Coordination Council (GCC) countries decided to sell their dollar FX reserves or sovereign wealth fund (SWF)⁴ dollar assets in favor of alternative reserves (euro, yen, etc.).

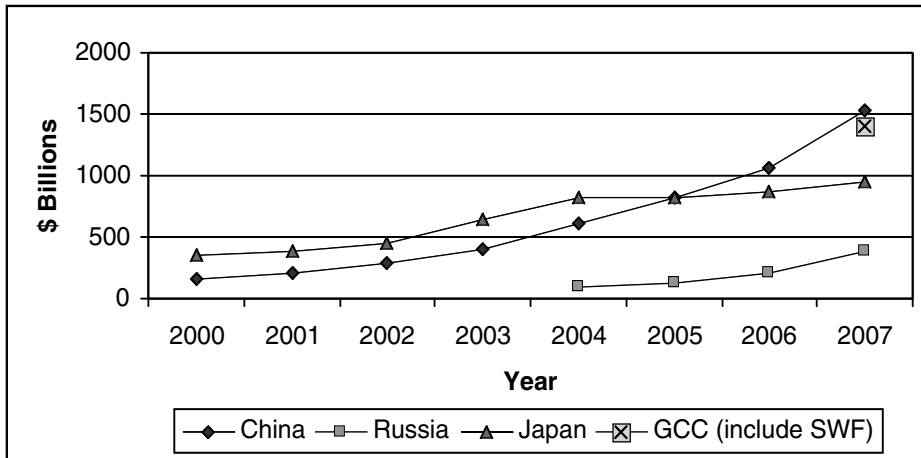


Figure 1. Foreign exchange reserves. Capturing FX data accurately is notoriously difficult, as many states consider it a state secret. Further, official reserves often are only partially in dollars (estimated 60–70%). The data presented here were obtained from a variety of online sources, including the IMF, US Treasury, and China’s SAFE (State Administration of Foreign Exchange), and should be mainly used in a qualitative sense. These data should be sufficient for the purpose intended—simply to show the significant growth in the last few years that in absolute terms would enable a currency attack. Further, the one datum point shown for GCC countries includes SWF assets.

Historically, the most effective currency attack arguably occurred during the Suez Canal crisis in 1956 when, for a variety of reasons, both Britain and France were interested in taking over the canal and causing problems for Egypt’s president Gamal Abdel Nasser.⁵ They joined forces with Israel and attacked Egypt in October 1956. The United States, however, was against this action and instead pushed for a peaceful resolution to the conflict. It led a vote in the United Nations demanding withdrawal, and the New York Federal Reserve Bank began quietly selling pounds. The Soviet Union also hinted at selling reserves, and Britain’s reserves quickly began to dwindle. Not only was Britain unable to convince the United States to cease pressuring the pound, the United States also would not even allow Britain access to its own reserves on deposit at the International Monetary Fund (IMF). Faced with no good options, Britain agreed to a cease-fire and the crisis was over. The United States forced Britain to abandon its

goals in Egypt by attacking its currency, a discreet move that quickly accomplished its objective. Still, an attack on the dollar would be different, given the size of the US economy and the dollar's world reserve currency status. Yet, the advent of states accruing large dollar reserves may make a currency attack against the United States a viable tool of economic statecraft.

America's enemies see dollar vulnerability leading to American decline. Iran's president Mahmoud Ahmadinejad and Venezuela's Hugo Chavez have repeatedly lobbied OPEC to cease pricing oil in dollars, with Chavez boasting, "Naturally, by the crash of the dollar, America's empire will crash."⁶ Former US comptroller general David Walker notes that many countries with large FX reserves are not allies and could act against US interests.⁷ Former treasury secretary Lawrence Summers calls this a "balance of terror," since both the United States and China could significantly damage the other by changing the status quo.⁸

China is often the straw man threat in future-conflict scenarios, with some foundation. China's rapid growth, increasing military spending, and need for strategic resources suggest that it will have the power and potentially the appetite for future conflict. Then there is Taiwan. Yet there is promise that with careful engagement, China could become a constructive world leader. Nonetheless, this article focuses primarily on China's potential to initiate a currency attack. China has the largest dollar reserves and is likely to continue as an economic flashpoint as long as global trade imbalances persist.

The probability of a currency attack on the dollar is low but plausible, and if not effectively countered, potentially devastating. Further, action now could minimize the impact. To reach these conclusions, the nature of a currency attack is reviewed in the next section, to include discussion of many conflating economic issues (reserve currency status, overvaluation of the dollar, etc.). Subsequent sections summarize how and why a state might conduct a currency attack, other large-dollar-holding states' reactions to an attack, and possible actions the United States could take to minimize the impact.

Fundamentals of a Currency Attack

Taiwanese elections were widely seen as a referendum on independence, with China threatening "grave consequences" for Taiwan

with any unilateral declaration. In response, the US pre-positioned two carrier task forces in the region, and quietly told China that any disagreements must be solved through peaceful negotiation. China warned the US not to interfere in domestic Chinese issues . . .

A review of currency theory basics will assist in understanding how a sale of large dollar reserves may harm the United States. The US dollar has a *flexible exchange rate*—the government allows market forces to determine the dollar's value. While the United States rarely intervenes in currency markets, there are limits to a true market price—both internal and external. Internally, the Federal Reserve must keep one eye on the dollar in conducting monetary policy; too low a dollar could stoke inflationary expectations. Externally, the value of a currency is always “against what,” and competing currencies are often managed carefully.

For example, the dollar's exchange rate in terms of yen is not a pure market result since the Japanese government manages the yen's value in some trading range to support its export economy. The dollar's value is determined primarily by US trade and financial flows, and like any price, is a function of supply and demand. In the long run, trade flows are the primary factor in currency valuation.⁹ While price-level effects explain

With **flexible exchange rates**, a state's currency is actively traded against other currencies in markets to determine its value. A flexible exchange rate allows a country to have an independent monetary policy. With **fixed (or pegged) exchange rates**, a currency's value is fixed against some standard (gold, another currency, or a basket of currencies) by government purchase or sale of its currency. A country must keep sufficient reserves to buy its currency if necessary to maintain the peg. Monetary policy must support the value of the peg and is not independent. Most previous currency crises occurred when a country's exchange rate was fixed but monetary policy supported domestic objectives (e.g., to stimulate growth) rather than maintaining the peg. These conflicting objectives forced the government to exhaust its reserves attempting to maintain the official exchange rate. When the reserves are gone, devaluation is the only option.

much of long-run currency valuation, other explanatory factors include a state's preferences for domestic goods over foreign goods, its trade policies, and its productivity. In the short run (which may be for several years), a currency's value is mainly determined by financial flows, which are driven by investment rates of return. Theory suggests the only difference between countries' interest rates is due to expected changes in the exchange rate over the time horizon of the investment (for similar risk levels).¹⁰ Changing expectations allow long-run factors to come back into play; when trade policies change or trade balances are different than expected or productivity jumps or slumps, expectations of the future exchange rate change. In the short run, therefore, a currency's value is determined by (1) changes in interest rate differentials or (2) changes in expected future currency value (driven by long-term factors).

How the dollar would respond to a fire sale of US assets is related to its underlying value when attacked. If overvalued, a large sale would tend to rapidly accelerate the underlying pressures for a new equilibrium and could result in large swings in the currency's value. Conversely, an

The **law of one price** suggests that any identical commodity should trade at the same price in all locations (after adjustment for transportation and transaction costs) and is the starting point for understanding currency valuation. For example, if a Coke costs one dollar in the United States but only 0.5 euros in Europe, then the exchange rate should be \$2/euro, or €0.5/dollar. If the dollar's exchange rate actually were \$3/euro, there would be an opportunity to profit by buying Cokes in the United States and shipping them to Europe (abstracting from shipping and transaction costs). The excess supply of Cokes produced in Europe would only be eliminated when the exchange rate returned to \$2/euro. In the overall economy, this becomes the theory of **purchasing power parity (PPP)**, which extends the law of one price to all prices by comparing price levels. Yet, while PPP can be evoked to partially explain long-term currency values, it is almost useless as a short-run or day-to-day predictor. See Frederic S. Mishkin, *The Economics of Money, Banking, and Financial Markets*, 5th ed. (Boston: Addison-Wesley, 1998), 171.

undervalued currency would see significantly less depreciation. Despite the dollar's recent sharp fall, the United States may still be vulnerable. In one noteworthy study of industrialized countries that experienced a balance-of-payments crisis, the crisis began after the adjustment process was already underway.¹¹ Even absent any fundamental imbalance, a large sale of dollar reserves could cause a sharp adjustment.

One interesting stylized fact concerning flexible exchange rates is that they may stay within some narrow band or trend for long periods of time and then adjust sharply to a new band or trend. The dollar's value might be strong for quite some time, like the early '80s, and then suddenly change course, as occurred in the latter '80s. This lack of smooth adjustment suggests the dollar could be fundamentally misvalued for quite a while, and when the market does correct, it does so dramatically. Rapid currency changes can cause large adjustments in the real economy as market participants are forced to adapt. Many currency crashes have occurred suddenly, even when contemporary theorists had warned that fundamentals necessitated an exchange rate correction.¹² Given the reality of government intervention in currency markets, it is not surprising to see such sharp adjustments.¹³

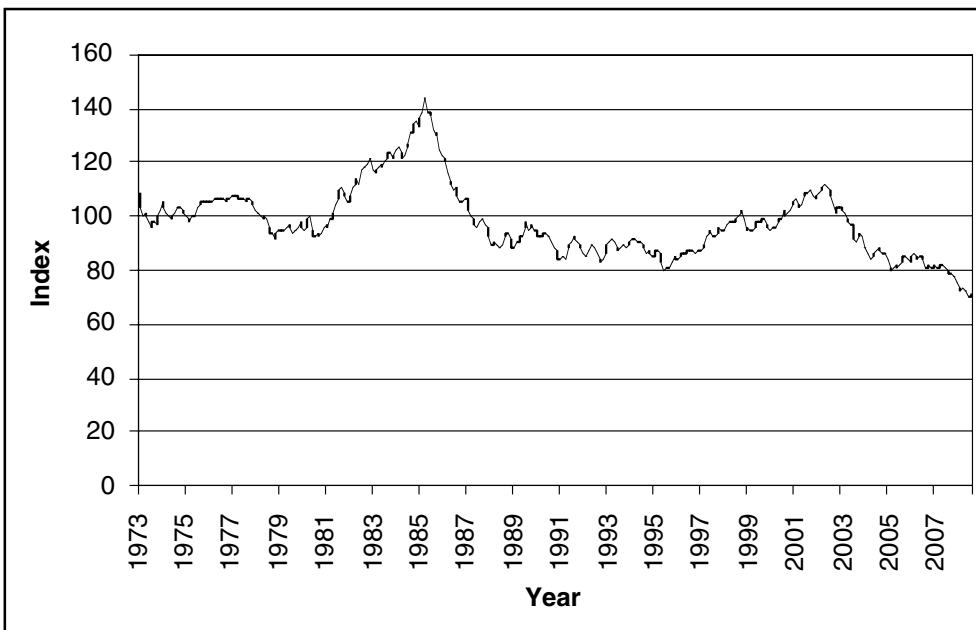


Figure 2. Major currency dollar index

As the US *current account* (CA) exploded to over 6 percent of gross domestic product (GDP) in 2006, many economists concluded the dollar

was overvalued and needed to depreciate to reach a sustainable CA balance (commonly thought to be ~3 percent of GDP). Large trade deficits leave foreigners with more dollars than they might want to hold in their portfolios. As they sell dollars to rebalance their portfolios, the dollar's value goes down. How overvalued the currency is depends on the assumptions made,¹⁴ and estimates of required depreciation can vary widely—between 15 and 50 percent in real terms.¹⁵ It is not clear yet from the dollar's large fall in 2007 whether it will stabilize or go lower, as the effects on trade only occur with a lag. If the dollar were overvalued, it would exacerbate the effects of a currency attack. Moreover, the recommendations for solving the current trade imbalances are all appropriate to mitigate risk of and damage from a currency attack.

The current account, the financial account, and the capital account make up the balance of payments and sum to zero, by definition. If a state has a CA deficit, it must have a capital and/or financial account surplus.

$$\text{Current Account} + \text{Financial Account} + \text{Capital Account} = 0$$

In practice, the United States has large CA deficits due to its poor balance of trade, which is by far the largest component of the current account.

$$\text{CA} = \text{Balance of Trade} + \text{Net Factor Income from Abroad} \\ + \text{Net Unilateral Transfers}$$

Dollars flow from the United States to purchase foreign-made products, such as oil or manufactured goods. The dollars return in the capital and/or financial account as foreign investors purchase US securities and make investments in US assets, keeping the balance of payments equal to zero.

Some fear a currency attack could precipitate a run on the dollar and endanger its role as the world's reserve currency. Several factors enable a currency to serve as a reserve currency. First, it should be widely used for

exchange of goods and services. Since most states want access to the large US domestic market, they need dollars to facilitate trade. Second, a reserve currency should come from a country (or countries) that have deep and liquid financial markets to provide a safe return on reserves. Finally, a fiat reserve currency is ideally backed by a government with a history of protecting its value and a politically independent central bank.

The dollar's dramatic drop in value since 2002 is seen by some as proof that its days as a reserve currency are numbered, but one must consider the long-run perspective and the potential competitors. The most likely competitor, the euro, has large and deep financial markets and trades with much of the world. But it is not backed by any government and has no long history—not even a history to include a full boom/bust cycle where internal friction over policy could arise. The euro is increasingly a share of other states' currency reserves, but that share is still relatively small.¹⁶ Further, as long as the United States is a large global trading partner, there will be demand for dollars to facilitate trade. Finally, many common fears of loss of reserve currency are overblown—the principle benefit to the United States is the interest savings associated with *seignorage*, and that amount is less than commonly believed.

Seignorage can be thought of as the amount of interest that a government would have to pay for the amount of currency it has outstanding; the more physical dollars people are willing to hold, the less T-bills a government has to pay interest on. Estimates of the interest savings associated with seignorage are ~ \$25 billion per year—no small amount, but in a \$13-trillion economy is less than commonly believed (and, of course, not all currency is foreign held). So to the extent foreigners are willing to hold physical US currency, the United States benefits from seignorage.

Contemporary concern over currency attack may be heightened since most financial crises of the last two decades were currency related. Yet those countries that suffered a crisis had a currency mismatch—their assets were denominated in their own currency, but their liabilities were denominated in others (usually dollars). When these countries had problems, nervous investors would withdraw their capital in dollars, unless prohibited by capital controls. Once a country's reserves were low enough, speculators

would begin to bet on devaluation, and a crisis would be just a matter of time. The US situation is radically different, as it has the “exorbitant privilege” of borrowing and paying back in its own currency.¹⁷

Implementing a Currency Attack

Despite China's attempt to intimidate Taiwan, voters overwhelmingly endorsed independence. It was less than a week until intelligence indicated China's missiles were being prepared to launch. When US naval forces moved in response on Sunday, markets across the world saw unprecedented selling of US T-bills on Monday . . .

Conceptually a currency attack is easy to understand. If an attacker holds \$100 million in US treasuries, it could sell those in any major financial market, deposit the cash dollar proceeds in a bank, and exchange the dollar-denominated bank deposits for bank deposits denominated in any other currency. Since all prices are determined on the margin, small changes in the amount sold can result in dramatically varying prices, depending upon the elasticity of demand. Even if the demand for dollars is very elastic, enough dollar sales could cause large swings in value. Indeed, the threat of dollar sales by a Chinese communist party official in 2007 led to a sharp drop in the dollar's value.¹⁸

What would be the real effect of a dramatic fall in the value of the dollar? While Americans are feeling that pain now with higher oil prices, a broader review shows less effect. Many exporters to the United States are unwilling to lose market share and will accept smaller profits when the dollar falls. The Federal Reserve estimates a fairly low pass-through rate of currency depreciation to the inflation rate.¹⁹ Furthermore, imports are less than 20 percent of American GDP, limiting the overall effect. If the dollar's value were to remain low longer term, *expenditure switching* would result in a decrease of US consumption, while US exports would increase. Also, the first-order effects of a currency attack may be temporary in nature, especially if the dollar were fundamentally in balance prior to an attack. The Bank for International Settlements reports that as of 2007, daily dollar transactions of all types equaled \$2.7 trillion, with cross-border claims equaling \$30 trillion and total financial derivatives at \$500 trillion!²⁰

The most plausible scenario for a currency attack to result in significant negative impact is based on market reaction. Market psychology is diffi-

cult to predict, but previous market dislocation experience suggests the reaction could be significant.²¹ Further, the reaction would be away from US treasuries, opposite the usual direction. Market participants would set

Expenditure switching occurs when a state whose currency appreciates (and imports become relatively cheaper) consumes more imports and exports less (since its exports cost relatively more). A state whose currency depreciates will see the opposite effect.

off on a mad scramble for alternative safe liquid assets, and the yen, the euro, and gold would likely see strong increases in demand. Global economic concerns would rise, as Europe and Japan would not be in favor of significantly stronger currencies.²² It would be very possible to see a crash in world markets, with expensive markets taking the worst hit. The real fear is if there are contagion effects. Extreme scenarios are possible, similar to the collapse of the hedge fund Long-Term Capital Management in 1998, as a dollar crash is likely not factored into market models. While growth in global dollar trading somewhat mitigates the possible damage of a currency attack, some of the largest increase comes in dollar derivatives, which are growing 20 percent annually.²³ A dislocation in the dollar market could result in significant losses; it is unclear how sound the *counterparties* to derivative contracts are in the wake of unprecedented losses.²⁴ If they are unable to meet their responsibilities, there is a possibility of cascading cross-defaults, with consequent market meltdown.

Counterparties is simply the other party opposite a hedge. For example, if you buy a put option to sell 100 shares of IBM, the person that sold the put is a counterparty. There is some risk that should you decide to exercise that option, the individual may not have the resources to purchase your 100 shares of IBM. While there are many protections for simple options, more complex derivatives have less oversight and more risk—with many times the leverage employed. Successful hedging of risk is dependent upon the ability of the counterparty to meet its obligation.

Potential Attackers—Why They Might Do It

While daily currency trading normally exceeded \$3 trillion, the marginal increase of \$300B on Monday caused a 5% drop in the value of the dollar, and interest rates rose a full point in longer-dated maturities. Rumors began to fly; obviously the Chinese were selling. But would the GCC countries try to sell in advance of a full-on dollar crisis?

Why would a state ever attack another country's currency? A broad answer is simply that it must believe an attack is the lowest-cost method to achieve a given objective and that the benefits exceed the cost. So what are China's costs to attack the dollar? The most obvious is that if China sold its dollar assets precipitously, it would receive fire sale returns on its investment and suffer huge losses, which might well harm China more than the United States. If China considered only profit and loss calculations, it would never take this action. Although states rationally optimize their behavior, the leadership of a state will have other considerations than simply maximizing profit. A state will equate marginal political and economic losses; to suffer a large economic loss associated with initiating a currency attack, the alternative political cost must be similar.²⁵ What political goal is worth it to China? Only its leadership would know; perhaps Taiwan?

To understand other costs that China must consider, we must appreciate why it has such large dollar reserves. When China began opening up in the late 1970s, it needed foreign exchange and technology; the preferred method to acquire these was through foreign direct investment (FDI).²⁶ The Latin American crisis of the early '80s heavily influenced Chinese thought; Chinese leadership subsequently demanded that Chinese companies balance their FX expenditures with their own FX revenues. Repeated global currency crises in the '80s and '90s showed the value of having large FX reserves, and China responded with policies that gained additional reserves. China began its peg to the dollar in 1994, largely in response to previous inflations that rocked its internal economy. Hong Kong pegged to the dollar in 1983 with very successful results, so a dollar peg seemed a natural way to stabilize. At the time, China did not have large CA surpluses; it was just as likely to import US capital equipment as to export. While China's economy grew robustly throughout the 1990s and subsequently, it was not until 2004 that CA surpluses started amassing at large rates (along with its dollar reserves). Prior to 2002, the expectation of currency change for China was in only one direction—depreciation.²⁷

Yet 2003 and 2004 saw marked increases in China's balance of payment surpluses (capital account and current account); these surpluses have persisted even after the 2005 revaluation of the *renminbi* against the dollar.

The magnitude of these surpluses (\$360 billion in 2007) requires large intervention by the PBOC on an almost daily basis to maintain the value of the *renminbi*.²⁸ As China receives dollars in exchange for its exports, the industries are required to deposit them with Chinese banks, which the PBOC then purchases with *renminbi*. To avoid the inflationary result of the *renminbi*, the PBOC raises bank reserve requirements and issues sterilization bonds to soak up the excess liquidity. China engages in sterilization to manage its growth as it struggles to shed inefficient state-run industries without causing mass unemployment that would accompany the operation of true market forces.²⁹

Nonetheless, the result of this process is not in China's long-term interest. Current policies tend to favor export industries and lead to overdevelopment of export industries at the expense of domestic demand. This

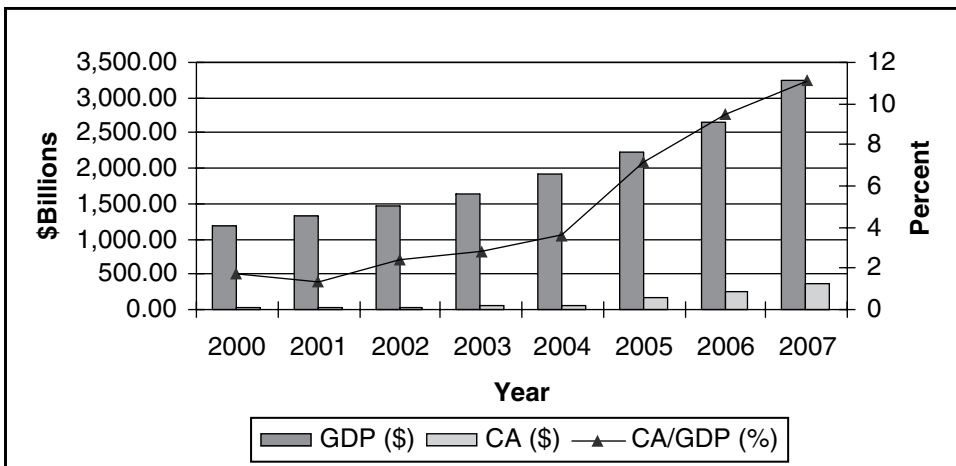


Figure 3. China's current account

limits domestic consumption to a level below where it would normally be and stimulates export production at a level greater than it should be, leading to suboptimal returns. Paradoxically, this malinvestment could result in the market determining the *renminbi* is overvalued, not undervalued!³⁰ Further, sterilization delays the necessary inflation (or real exchange rate appreciation) China requires, forcing the beleaguered banking system to hold underperforming assets. Chinese economists lament that China pays high returns to obtain US FDI while receiving very low returns on its

US treasury investments.³¹ Many analysts note this can only continue as long as the returns on US treasuries exceed what the PBOC must pay on its sterilization bonds; yet recent US interest rate cuts by the Federal Reserve have inverted this, forcing the Chinese, in effect, to pay to loan the United States money (on top of losses associated with dollar depreciation)! Since many of the PBOC's liabilities are non-interest bearing, it is still profitable on a cash flow basis although its implied capital losses exceed current interest income.³² Clearly at some point, the Chinese will be forced to stop this policy.³³ China appears to be recognizing the costs of its current policy; the creation of the China Investment Corporation as a sovereign wealth fund is an implicit acknowledgement that China has sufficient reserves and should manage them more efficiently.³⁴ In addition, China requires reserves to deal with the recapitalization of its state-run banking system, which is known to be saddled with huge loan losses from state-run industries.³⁵

With this background, we see that China has large dollar reserves (1) as a buffer against financial crises, (2) as the necessary counterpart to large current account/capital account surpluses, (3) because of capital controls, and (4) to facilitate banking system reform.³⁶ All these factors lead China to favor FDI supporting export industries. Consideration of the costs to China of a currency attack must include the implications to these objectives. First, China would be forced to suspend its dollar peg or suffer the same whipsaw effect it intended for the United States.³⁷ It is not clear how markets would respond to this, but it is clear that it would increase instability—something known to be abhorred by Chinese leadership. Second, China's overarching economic goal is to transition employment away from inefficient state-run industries towards export industries. Economic conflict with the United States would derail this important objective, as exports would be reduced (certainly to the United States). Further, a currency attack would almost certainly reduce FDI in China, especially if a financial contagion developed. Thus, a currency attack would not only eliminate China's dollar reserve position at a huge loss, it would also deny China the "insurance policy" of reserves to protect against crisis—an economic crisis that might very well occur with a currency attack on the dollar. Given China's careful crafting of reserves and how deeply it abhors internal instability, the probability of a currency attack seems extremely remote.

Beyond China: Reactions to a Currency Attack

Japan and the UK suffered huge losses in their dollar reserve portfolio. Japan's ambassador suggested to the US Treasury secretary that they could not suffer further losses, and would take whatever action necessary

How would other large dollar holders react to a currency attack or the threat of one? First consider Japan, which has ~\$1 trillion in dollar-denominated reserves. What would it do? Selling would be very difficult, as that might precipitate a dollar run and destroy its portfolio's value. Would it buy? This is heavily influenced by the dollar's fundamental value. Are we in a stable, long-term equilibrium that a currency attack is only temporarily perturbing? If that were the case, many buyers would appear to take advantage of artificially low prices. If not, Japan, the UK, and others would still have an interest in preserving their portfolios' values; they may be willing to add to their positions to halt a dollar run.

Other actors to consider include Russia and the GCC countries, which are not traditional allies and could act in ways that are either stabilizing or destabilizing. From an economic calculus, they would want to preserve the value of the foreign exchange; they face the same considerations as the UK and Japan. However, it may be in their political interest to either hurt or help the United States when it is down. For instance, Russia has become increasingly belligerent as its fortunes have risen with commodity wealth. Dollar hegemony is emblematic of US hegemony in many respects; an attack on the dollar could reduce American influence worldwide and thereby further Russia's own national interest. Russia has already switched to a reserve basket with euros and dollars; it could certainly change the percentage in favor of euros at an unhelpful time. While Russia could lose money with a fire sale approach, two factors mitigate this loss. First, Russia has significantly less dollar reserves than China, so if it sold first Russia might be able to sell a larger portion before suffering serious capital losses. Second, Russia does not have China's level of structural dependency on the US consumer for its commodity exports.

While initial world reaction would likely blame China for the attack, as the economic implications began being felt worldwide, the United States could receive blame for its policies which created the large dollar debt. Had the United States kept its house in order, so the thinking may go, this would never have happened. It is possible that anti-American senti-

ment may rise globally, potentially hindering cooperative response to the crisis. While this analysis is speculative, it nonetheless suggests that any responses requiring international coordination need to be prepared in advance; it may be more difficult to achieve agreement in the aftermath of any attack.

Currency Attack Responses

Global stock markets began plunging; rumors suggested several large funds had engaged in dollar carry trades, and heavily leveraged this bet. The 10% drop in the dollar was forcing liquidation of assets, including equities. With the weakness in the dollar and equity markets worldwide, the Euro shot up over 25% in one day, and Gold went above \$3000/oz for the 1st time. Wednesday saw stock futures down 30% in the US and more in other global markets. A financial contagion was in work; none of the quantitative models had assumed this 6-sigma event . . .

A currency attack is improbable but threatens potentially devastating results—if the attack is allowed to disrupt financial markets such that a contagion results. Yet given the large, deep markets in US treasuries, the United States can develop strategies to minimize the effect of large, simultaneous dollar sales.³⁸ There are at least three broad strategies to prevent or mitigate a currency attack, discussed below from the easiest to implement to the hardest. There is also a common theme; these strategies should be implemented immediately, as the speed of modern financial markets may not allow an ad hoc currency attack defense.

Internal US Coordination

First, the US government must prepare for a currency attack, to include exercising representative scenarios in a revised National Security Council (NSC) interagency crisis planning process. Scenarios should flesh out coordination between the DoD, the Treasury, the intelligence community, and the Federal Reserve, at a minimum. This coordination should cement information flow processes as well as war-gaming the specific responses and timing required to implement. For instance, which financial markets could be disrupted (locations and types), and which could be used to defend? Which agency interfaces with which market? What types of controls might be effective? Outright market closure (how long)? Circuit breakers

(what thresholds?)? How would the Treasury and the Federal Reserve jointly act?³⁹ Second, scenarios should be developed for differing threat countries. The internal impact on some attacking states is drastically different from others; likewise, the magnitude of the threat. The United States clearly cannot have a one-size-fits-all currency attack response.

External Coordination

Japan, the EU, the UK, and other large dollar holders have a vested interest in helping the United States defeat a currency attack; we should enter into formal arrangements to handle “extreme” currency movements.⁴⁰ Japan will not want the capital value of its dollar holdings destroyed and will not want the yen to rise appreciably, nor will it want to see China gain further regional prominence. The EU will not want to see the euro appreciate significantly and will likely have some concern over Chinese hostility toward Taiwan. The UK is a traditional ally and a holder of large amounts of dollar-denominated assets; on both counts it will likely support the United States. Most nations will not find it in their interest to see the world’s reserve currency in freefall.

US Structural Reforms

The United States should work towards eliminating existing global imbalances, beginning with the orderly adjustment of the dollar to a level that can be sustained over the longer term. Several factors can assist in this adjustment. First, the United States does not typically engage in direct currency manipulation, yet many of its trading partners do. The United States should engage these partners to end such manipulation. To the extent that markets determine the dollar’s value, the less painful will be the necessary structural reforms.

The United States must also make other changes to its balance of payments. The US CA deficit is historically high and at levels that have led to currency crises in other countries (> 5 percent of GDP). While the dollar’s world reserve currency status has postponed a crisis heretofore, the longer the United States waits to adjust, the more painful it will be. Existing CA imbalances are offset by capital and financial account surpluses, as must be the case in balance-of-payment accounting.⁴¹ Foreign central banks have accumulated large dollar reserves, in part because the United States issued vast amounts of debt to finance deficit spending. If the United States weans off deficit spending, it would eliminate the primary source of dollar

accumulation and minimize the difficulties to US government operations should an attack occur. Mitigation of currency attack risk is yet another sound reason for the United States to get its fiscal house in order.

Further, the United States should implement policies to increase its private savings rate in addition to increasing public savings. By definition, a current account deficit must equal the difference between a country's investment and its national savings (the sum of public and private savings). If the United States wants to maintain a high level of investment and reduce its CA deficit, it must increase national savings. The US private savings rate went negative in 2005 and has hovered around zero since. There are many analyses as to why, including some that suggest that the low savings rate may not be a problem.⁴² Without debating the proper measurement of the private savings rate or the causes of today's low rates, one can still see an obvious truth: if the United States consumes more than it produces, someone else is making up the difference and is building dollar reserves that could be used in a currency attack. Both fiscal and monetary policies should be adjusted to encourage private savings.⁴³

Conclusion

We are now living in the long run. In contrast to the “deficits don't matter” mantra, run fiscal decisions that sent large dollar debt overseas are now resulting in major currency adjustments. The dollar's dramatic fall since 2002 is manifesting itself in higher prices for food, energy, and other commodities, and is beginning to correct the global imbalances in trade. As we live with the long run consequences of our previous fiscal policies, we must also deal with the national security implications as well. Currency attacks have historically been an integral part of any war effort. The emergence of states holding large dollar reserves suggests, that they could be factors in the future as well—we must be prepared. If a currency attack is not countered effectively, it could have a devastating impact on the United States. Nonetheless, actions can be taken now to minimize the impact, ensuring that the costs to the attacker would exceed any to the United States—turning a low probability event into a virtual zero-probability event. **SSQ**

Notes

1. For a detailed review, see Gary Hufbauer and Claire Brunel, "The US Congress and the Chinese Yuan," paper presented at the conference on China's Exchange Rate Policy, Peterson Institute for International Economics, Washington, DC, 19 October 2007, <http://www.iie.com/publications/papers/hufbauer1007.pdf>.

2. There were 2.7 million hits searching "China currency dollar attack." Obviously many of these are not directly related to the topic, but the point remains: this is an issue that generates much heat but little light. President Bush's comments can be found at http://www.breitbart.com/article.php?id=070809035534.0fweodz8&show_article=1.

3. Francis E. Warnock and Veronica Cacadac Warnock, "International Capital Flows and U.S. Interest Rates" (working paper no. 12560, National Bureau of Economic Research, Cambridge, MA, October 2006), 4, <http://www.nber.org/papers/w12560>. Warnock and Warnock estimate that absent foreign capital inflows, including China's significant contribution, rates on 10-year US treasuries would have been almost 1 percent higher.

4. SWFs raise a whole host of issues well beyond the scope of this article; nonetheless, the dollar-denominated assets they hold obviously could be sold and exchanged for alternative-currency-denominated assets, pressuring the dollar the same way as FX sales. In considering the ability to threaten the dollar in a currency attack, one should consider the amount of total dollar-denominated assets under the state's control that could be sold in the conduct of an attack, which would include any FX and SWF assets. If, as is likely, SWF assets are less liquid, they may be less helpful to an attacker.

5. Jonathon Kirshner, *Currency and Coercion: the Political Economy of International Monetary Power* (Princeton, NJ: Princeton University Press, 1995), 63–72. Special thanks to Jodi Liss for identifying this relevant source for use in my article. In addition, her paper on currency attack, "Making Monetary Mischief: Using Currency as a Weapon," *World Policy Journal*, Winter 2007/2008, is a valuable read, describing multiple currency attack strategies, contrasting with this dollar-centric review.

6. Hugo Chavez, comments made during a joint press conference with Iran's president Mahmoud Ahmadinejad, 19 November 2007, <http://www.reuters.com/article/topNews/idUSL1918534820071119>.

7. Suzy Jagger and Gary Duncan, "U.S. financial watchdog says economy at risk from 'nonally' bondholders," *Times Online*, 23 July 2007.

8. Lawrence H. Summers, "The United States and the Global Adjustment Process" (speech, Stavros S. Niarchos Lecture Institute for International Economics, Washington, DC, 23 March 2004), <http://www.petersoninstitute.org/publications/papers/paper.cfm?ResearchID=200>.

9. The law of one price suggests that any identical commodity should trade at the same price in all locations (after adjustment for transportation and transaction costs). In the overall economy, this becomes the theory of purchasing power parity (PPP), which extends to all prices. Yet, while PPP can be evoked to partially explain long-term currency values, it is almost useless as a short-run or day-to-day predictor. See Frederic S. Mishkin, *The Economics of Money, Banking, and Financial Markets*, 5th ed. (Boston: Addison-Wesley, 1998), 171.

10. Any differential in interest rates from the parity condition opens up an arbitrage opportunity; capital would then flow in the appropriate direction until parity is restored. While the empirical evidence is mixed on how well interest rate parity predicts actual exchange values, conceptually it is very appealing.

11. Caroline L. Freund, "Current Account Adjustment in Industrialized Countries," International Finance Discussion Papers 692 (Washington, DC: Board of Governors of Federal Reserve System, December 2000), <http://www.federalreserve.gov/pubs/ifdp/2000/692/ifdp692.pdf>.

12. Barry Eichengreen, "Notes on Dooley and Garber's 'Three Notes on the Revived Bretton Woods System'" (presentation to the Brookings Panel, 31 March 2005), http://www.econ.berkeley.edu/~eichengr/reviews/dooley_garber_brookingsmay26-05.pdf.

13. This is most obvious when a government tries to defend an overvalued peg but also when a floating (or flexible exchange rate) currency is in reality a "dirty" float. A dirty float means a currency is allowed to float within a prescribed trading range (usually only known to the monetary authorities).

14. Martin Baily suggests his estimates of necessary dollar depreciation (15–20% of real depreciation from January 2007 levels) are lower than others due to his review of the data that suggests the so-called Houthakker-Magee effect is lower than predicted. Martin Neil Baily, "How Large a Dollar Adjustment to Reduce the US Imbalance?" (presentation, joint Bruegel, KIEP, and Peterson Institute Workshop on Adjusting Global Imbalances, Washington, DC, 8–9 February 2007, paper revised 19 March 2007), <http://www.petersoninstitute.org/publications/pb/pb07-4/baily.pdf>.

15. For example, Obstfeld and Rogoff suggest a 35-percent depreciation in the Real Effective Exchange Rate in Maurice Obstfeld and Kenneth S. Rogoff, "Global Current Account Imbalances and Exchange Rate Adjustments," *Brookings Papers on Economic Activity* (BPEA) 2005, no. 1 (2005): 67–123. Goldstein suggests a depreciation of 15–25 percent; see Morris Goldstein, "Renminbi Controversies," *Cato Journal* 26, no. 2 (Spring/Summer 2006): 253. Countervailing views suggest that there is no need for a near-term depreciation, given global capital portfolio choices; see Michael Dooley and Peter Garber, "Is it 1958 or 1968? Three Notes on the Longevity of the Revived Bretton Woods System," *BPEA* 2005, no. 1 (2005): 147–87. Further, Edwards notes that many smaller industrialized states that had a current account reversal saw much smaller depreciations than models suggest; see Sebastian Edwards, "Is the U.S. Current Account Deficit Sustainable? If Not, How Costly is Adjustment Likely to Be?" *BPEA* 2005, no. 1 (2005): 211–71. Nonetheless, the consensus seems to be that the US dollar was overvalued in 2007; significant depreciation since then may or may not have enabled the dollar to achieve equilibrium.

16. The dollar still had over 60 percent share of total reserves at the end of 2007, with the euro less than 30 percent. Economic blogger Brad Setser argues that while relative dollar share is declining somewhat (and less than commonly thought, due to changes in currency valuation of assets), one should note that absolute dollars are increasing as global reserves. See <http://www.rgemonitor.com/blog/setser/archive/2008-01/5/20/>. See also Reuven Brenner, "The U.S. Dollar and Prosperity: Accidents Waiting to Happen," *Cato Journal* 26, no. 2 (Spring/Summer 2006): 317–32.

17. As French president Charles de Gaulle repeatedly lamented during the 1960s.

18. James Fallows, "The \$1.4 Trillion Question," *TheAtlantic.com*, 15 January 2008.

19. Economist Diego Valderrama found that when the dollar depreciated 19.1 percent between 2002 and 2004, non-oil import prices only increased by 4.1 percent, although there could be some additional rise due to lagged effects. Diego Valderrama, "Does a Fall in the Dollar Mean Higher U.S. Consumer Prices?" Federal Reserve Bank of San Francisco Economic Letter, 13 August 2004, <http://www.frbsf.org/publications/economics/letter/2004/el2004-21.html>.

20. Ryan Stever, Christian Upper, and Goetz von Peter, "Highlights of International Banking and Financial Market Activity," *BIS Quarterly Review* (December 2007): 19–31, http://www.bis.org/publ/qtrpdf/r_qt0712.pdf. Edwin Truman goes farther, suggesting this growing differential between reserve assets and private transactions minimizes the impact of FX sales; a currency attack

is therefore very improbable. Edwin M. Truman, "Postponing Global Adjustment: An Analysis of the Pending Adjustment of Global Imbalances" (working paper WP05-06, Institute for International Economics, Washington, DC, 2005), 24, <http://www.petersoninstitute.org/publications/wp/wp05-6.pdf>.

In addition, "home bias," the trend favoring domestic investment over foreign investment, has been decreasing steadily; global foreign-owned assets rose to \$74.5 trillion in 2006. This trend would tend to counteract any concerted selling by one party; increasingly, other foreign buyers are available to fill the gap. See Diana Farrell et al., "Mapping Global Capital Markets: Fourth Annual Report," McKinsey Global Institute, January 2008, http://www.mckinsey.com/mgi/publications/Mapping_Global/index.asp.

21. Interestingly, many market observers blame Treasury secretary Jim Baker's comments on the need for the dollar to fall in value as triggering the "Black Monday" sell-off in October 1987.

22. Japan is widely known to manage the value of the yen within a range. While the euro may not be managed, there has been considerable angst, led by France's president Nicholas Sarkozy, over the recent rise in its value. He cautioned it could lead to "economic war" in a speech to the US Congress.

23. Stever et al., "Highlights of International Banking," 25.

24. Witness the current concern with monoline bond insurers after the subprime sell-off. It is still an open question whether these insurers will be able to fulfill their counterparty responsibilities, should losses increase. Clearly their capital base is much too small to cover the potential losses (-1 percent of exposure).

25. If a state has a two-goal utility function composed of political (P) and economic (E) goals, and more of one goal comes at the expense of the other, then the state will balance the marginal benefit of political goals with the marginal benefit of economic goals. Let $U = f(E, P)$ where $E + P = 1$. By substitution, $U = f(1 - P, P)$. Taking the derivative with respect to P to maximize utility yields the expression: $\partial U / \partial E * \partial E / \partial P + \partial U / \partial P = 0$, or $\partial U / \partial E * (-1) + \partial U / \partial P = 0$, or $\partial U / \partial E = \partial U / \partial P$, where $\partial U / \partial E$ is the marginal benefit of economic goals and $\partial U / \partial P$ is the marginal benefit of political goals.

26. Yu Yongding, "Global Imbalances: China's Perspective" (presentation, Institute for International Economics conference on Global Imbalances, 8 February 2007), 12-13. <http://www.iie.com/publications/pb/pb07-4/yu.pdf>.

27. John Greenwood, "The Future of the Renminbi" (panel discussion, Cato Institute's 25th annual monetary conference: Monetary Arrangements in the 21st Century, 14 November 2007).

28. As with the FX data, I have strong reservations about the accuracy of this data; there are many conflicting estimates, and China is not always willing or able to accurately report economic data. Once again this is sufficient for the qualitative assessment in this article.

29. For an excellent review of some of the relevant issues, see Wendy Dobson and Anil K. Kashyap, "The Contradiction in China's Gradualist Banking Reforms," BPEA 2006, no. 2 (Fall 2006): 103-48.

30. Greenwood, "Future of the Renminbi," 8-11.

31. Yu, "Global Imbalances," 18.

32. See Brad Setser's blog, "What to do with over a half a trillion a year? Understanding the changes in the management of China's Foreign Assets," 15 January 2008, <http://www.rgemonitor.com/>.

33. Goldman Sachs calculates that China is losing ~\$4 billion per month due to the interest rate differential. See <http://china-economics-blog.blogspot.com/2008/01/us-rate-cuts-puts-pbc-under-increasing.html>.

34. In a private conversation between the author and a senior member of the PBOC, the official acknowledged that China has too many dollar reserves; the Chinese would like to have less overall dollar reserves than they have currently once their financial transformation is complete.

35. Yu highlights another important factor: local politicians are rewarded for how much FDI they can attract. Given current institutional preferences, this FDI is steered towards export industries.

36. Capital controls prevent many Chinese from being able to diversify their portfolios. This leads some economists to suggest that when capital controls are relaxed, there may be such a desire for diversification out of *renminbi* that its value falls relative to the dollar; this is yet another reason for China to have larger than normal FX reserves. Dooley and Garber, "Is it 1958 or 1968?" 165.

37. Given the larger role of imports and exports in China's GDP, it could face larger economic disruptions.

38. This does not imply there will not still be significant costs, such as higher financing costs of US debt, just that these costs would be relatively small (and likely small enough that any potentially hostile state would not consider the damage nearly large enough to compensate it from its own internal losses).

39. This recommendation is consistent with Kao's broader suggestion that the US military include more economic analysis in its contingency planning, with increased interagency coordination. Philip Y. Kao, "Future Approaches to the Economic Instrument of Power," *Joint Force Quarterly*, no. 43 (4th Qtr. 2006): 50–53.

40. Peter Bofinger, a prominent German economic advisor, suggests just such an arrangement. Matthias Streitz, "The Strong Euro is Destroying Jobs," *Spiegel Online International*, 21 November 2007, <http://www.spiegel.de/international/business/0,1518,518717,00.html>.

41. Some analysts suggest this is simply the result of the United States being an exceptionally good place to invest, but Setser argues that central bank accumulation of dollar reserves (such as by China, Russia, and GCC countries) is largely the cause rather than private long-term investment. See Setser's blog discussion for a review of this point, <http://www.rgemonitor.com/blog/setser/233036>. For a different perspective, see Richard N. Cooper, "Living with Global Imbalances: A Contrarian View," <http://www.petersoninstitute.org/publications/pb/pb05-3.pdf>.

42. See Charles Steindel, "How Worrisome Is a Negative Saving Rate?" *Current Issues in Economics and Finance* 13, no. 4 (May 2007): 1–7, http://www.newyorkfed.org/research/current_issues/ci13-4.pdf.

43. Monetary policy has specifically reduced incentives to private saving: low interest rates discourage saving, and monetary growth has led to higher asset prices, further discouraging saving. Negative real interest rates between 2002 and 2005 were most unhelpful in this regard.

A Strategic Conversation about National Missile Defense

Alexi A. LeFevre, 1st Lieutenant, USAF

AS THE WARS in Iraq and Afghanistan continue, as instability rises in Pakistan, as we face off with Russian interventionism, and as China delivers the Olympics, the future of US national security strategy becomes more and more tenuous. These collective events represent just a few trends and potential threats across a very broad spectrum. As American policy makers determine the course of our grand strategy, it becomes necessary to engage in a critically important conversation. In the face of difficult economic times and dynamic geopolitics, we must be willing to ask the tough questions, and we must also demand the tougher answers. Such a conversation is underway at this very moment with regards to national missile defense (NMD) and the related strategic imperatives of America and her allies. While there are many sides to this conversation, some questions will simply need to be addressed.

First, one must consider the threat spectrum. Is there a convergence between states potentially pursuing intercontinental ballistic missile (ICBM) capabilities and states with intent to do us harm? Second, what degree of real progress has been made in testing and proving the current system? Third, would an NMD system be a stabilizing or destabilizing element in the current geopolitical order? By approaching and answering these questions honestly, we can determine the best course of action for the United States, both as a global superpower and as one actor on a very large stage.

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The Myth of the Missile Threat

Proponents of national missile defense systems often first make claims of burgeoning security threats, pointing to missile tests and discussing numbers and sizes of missile arsenals. While countries such as Iran and North Korea certainly present military threats, the claims made by ardent missile defense supporters are often overblown and designed to instigate a kind of terror similar to the one borne from the missile gap of the 1960s. In fact, over the past 40 years, far more states have abandoned nuclear weapons programs than have initiated them.¹

During his 1983 “Star Wars” speech, President Reagan repeatedly commented on the Soviet nuclear arsenal. He argued that “their missiles are much more powerful and accurate than they were several years ago, and they continue to develop more, while ours are increasingly obsolete.”² When discussing the Soviet nuclear threat, he often referred to a “margin of superiority,” a phrase likely motivated by decades-earlier Soviet claims that they were “producing missiles like sausages.” These quotes, and the overall tone of Reagan’s speech, indicate the specific historical context in which missile defense was considered. The logic behind developing the Strategic Defense Initiative was based on the *thought* that the Soviets possessed a critical advantage with their strategic rocket forces. Furthermore, one must look at the specific events of the early 1980s. Détente collapsed; Soviet aggression expanded into Afghanistan, Latin America, and elsewhere; and both sides were antagonized by events like Operation Ryan, Able Archer ’83, and the deployment of Pershing missiles to Western Europe. Given this additional “freezing” of the Cold War, it is easy to see why American military and political leaders believed a missile defense system was necessary. Today, the geopolitical context does not indicate that an NMD system is strategically worthwhile.

First, let us look at Iran. The November 2007 *National Intelligence Estimate (NIE)* assessed, “with moderate-to-high confidence that Iran does not currently have a nuclear weapon” and made similar reassuring comments about Iran’s intent to produce one.³ Iran has never successfully test-fired a long-range missile nor has it ever successfully detonated a nuclear device. Iranian tests conducted in June of this year indicate that, by all accounts, even their short- and medium-range missiles are, at best, partly reliable. It is believed that Iran went to some lengths to falsify photographs of these tests. Some have further argued that Iran, or others, might pass nuclear weapons technology to terrorist groups. This argument is not applicable.

It is highly unlikely that nonstate or transnational actors would choose an intercontinental ballistic missile as their weapon of choice. The technology and infrastructure needed to launch an ICBM is hardly the kind a terrorist organization would possess. The events of September 11th, as well as attacks in London, Madrid, Mumbai, Bali, and elsewhere, should be proof enough. We are far more likely to see radiological “dirty bombs,” attacks on commercial airliners, weapons of mass destruction (WMD) placed in shipping containers, the introduction of chemical or biological agents into major waterways, or conventional car and pipe bomb attacks. All of these are cheaper, easier, and just as traumatic.

Next, let us look at North Korea. The Taepodong-2 missile test-fired by North Korea in July 2006 failed 42 seconds into flight, the only missile in the North Korean arsenal with the potential to hit the United States. This was the only test of this missile and demonstrates the extreme difficulty North Korea has faced in producing a stable, capable, long-range ballistic missile platform. This test “harked” back to the September 1998 test of a Taepodong-1 missile. Meant to be the inaugural launch of a satellite for North Korea, that launch, too, ended in failure when the third stage failed to fire. Furthermore, there is no evidence that, aside from the launch platform itself, North Korea has made any great strides in producing an effective reentry vehicle (RV) and warhead system that would be needed to convert the missile into a weapon. Placing nuclear warheads on the tips of missiles is far more complicated than simply producing the missile itself. It requires specific engineering capabilities and very fine design tolerances. Finally, recent developments regarding the North’s shutting down of its Yongbyon nuclear plant and the demolition of its cooling tower are positive signs and proof that hard-fought diplomacy is slowly working.

There are other regimes, too, that are hostile to US interests. While ballistic missiles will always be a threat, the more likely weapon of choice by such regimes would be land-attack cruise missiles. A 2006 study by the National Air and Space Intelligence Center states that “the cruise missile threat to US forces will increase over the next decade.”⁴ Cruise missiles are cheaper to produce and much more effective as precision strike tools. A broad-based NMD system would present no defense against this kind of weapon, as it would likely be used within local theaters of war. Air defense systems, as well as theater-based missile defense systems, would be far better options, as will be discussed later in this article.

The Antiballistic Missile (ABM) Treaty of 1972 was a unique milestone in Cold War diplomacy because it was the first time both sides accepted the immediate and automatic vulnerability that nuclear weaponry presented to the other side. This, of course, is the cornerstone of Mutual Assured Destruction (MAD). It is safe to say that those national leaders who might one day possess global nuclear strike capability would think twice before initiating any kind of attack on the United States or its allies. Arguments about unstable leaders and rogue states are unfounded. Even the dictatorial regimes of Iran and North Korea are led by individuals who, above all else, seek to remain in power. That instigating a nuclear war with the United States would *not* further those aims is self evident.

Progress to Date: Truth and Cost

Over the past 25 years, there have been a number of tests carried out to develop and prove the various elements of the NMD system. While some of these tests have demonstrated sound technological principles, none have yet proven that a real operational system is close to deployment.

Arguments against the technological impossibility are, I think, unnecessary. There is no doubt that given enough funding and time, the widely capable American defense industry can overcome some of the most demanding technological challenges of a basic system. However, the exorbitant financial costs of the research, development, testing, and evaluation (RDT&E) of the system have been, and will continue to be, enormous. The Congressional Budget Office has projected total costs of the system to reach upwards of \$200 billion by 2025.⁵ Money so far spent on development of the Ground-Based Midcourse Defense system would have been better spent elsewhere, and further funding of future projects, such as multiple kill vehicles (MKV), airborne laser (ABL) programs, kinetic energy interceptors (KEI) focused on boost-phase impacts, and additional interceptors meant to overcome the inevitable use of decoys and multiple warheads, all present obscene financial obligations that would have drastic impacts on an already wasteful defense budget beholden to special interests in the military industrial complex.

The vast majority of tests conducted so far have been extremely limited in both their level of complexity and their realism. In several, the flight path of the dummy missile was known to the interceptor prior to launch, providing the KEI's guidance systems with information not normally

available prior to a hostile launch. Before an operational system can be fielded, these tests will have to be expanded to determine the interceptor's ability to determine real-time changes in trajectory of a given RV. This is especially important considering Russia's claims to have developed RVs capable of moving and altering their flight paths after separation from the warhead bus. In addition, there need to be more tests to measure the system's ability to distinguish between actual RVs and decoys and to determine the ability of ground-based radar systems to effectively track warheads when they are deployed in a cloud of radar-reflecting chaff. These are techniques that Russia claims to possess and could potentially export to other countries. While many call for the deployment of a system today with limited capability, such a piecemeal approach would be pointless, ineffective, and a waste of resources.

The minor diplomatic concord between Washington, Prague, and Warsaw overshadows more significant issues that have yet to be addressed. Recent objections to the current deployment timeline by the Operational Test and Evaluation Directorate, the DoD's internal testing oversight arm, indicate that the European element of the missile defense system is not yet proven and would not be operable until 2018, five years later than the initial projected date of deployment.⁶ Furthermore, one must consider the potential costs for American-friendly regimes in Eastern Europe.

Leaders throughout the region have expressed their concern over Russian claims that they will retarget nuclear missiles to those countries that harbor American antimissile sites. In spite of recent agreements, there remains strong domestic opposition to the deployment of a US missile defense system in the Czech Republic and Poland. Polish parliamentary elections in October 2007 removed the Law and Justice Party from power, along with Prime Minister Jaroslaw Kaczynski, due in part to its ardent support of the American antimissile system. Difficult elections in Prague in June 2006 removed the Social Democratic Party from power and replaced it with a shaky coalition. Again, this was due to the party's unambiguous support for an antimissile establishment. Public opposition to the installation of NMD sites in both countries is unlikely to wane.⁷ This presents a critical question that policy makers in Congress and the White House must answer. Are we willing to spend considerable amounts of political capital by pushing the deployment of NMD systems in Europe and elsewhere?

A Destabilizing Concept

The nuclear forces of the United States have often been called with pride the “strategic backstop of our nation,” and for good reason. Over the course of 60 years and through countless international incidents, the concept of Mutual Assured Destruction and the broader idea of strategic deterrence have held strong thanks to our assured and reliable nuclear launch capability. Though the United States and the Soviet Union certainly faced some very close calls, all historical accounts indicate that the single most concerning factor in the minds of leaders was the prospect of unrecoverable, irreversible, nuclear war and the global destruction it would cause.

There is no reason to think that strategic deterrence would fail against current national actors. Deterrence as a strategy requires that the players involved hold their own continued survival as the highest national interest. Given the self-interested actions of the current regimes in Iran, North Korea, Libya, Syria, Pakistan, and others, it is logical to assume that these countries would be more willing to accept a status quo or move towards some form of reconciliation rather than initiate a hostile nuclear attack that would undoubtedly result in a devastating response. Today, the path of conciliation can be seen when we look at Libya’s decision to give up its nuclear weapons, North Korea’s destruction of part of its Yongbyon nuclear plant, Pakistan’s arrest of A.Q. Khan, and so forth. While all of these actions certainly are not final products, they are steps in the right direction. Furthermore, critics of deterrence argue that it becomes a non-player when one considers irrational or suicidal actors, most often seen in terrorist organizations. As I previously discussed, it is highly unlikely that these groups would use nuclear missiles as their method of attack, and an NMD would provide no defense against this.

Many proponents of the NMD claim that it would be a stabilizing factor in the world. Nothing could be further from the truth. Russia has already stated its intent to withdraw from the INF Treaty if US missile defense systems are installed in Europe. It has also stated that it plans to develop hypersonic vehicles for its missile systems and to enhance its platforms already containing decoys, such as the Topol-M. China, too, has insisted that the formation of a US missile shield would likely cause it to develop more devastating nuclear weapons in larger numbers. These would not only render an NMD system impotent, they also would undoubtedly initiate a new arms race. The logic is simple. Why would any country willingly let its nuclear advantage slip away? Why would it not

enhance its nuclear forces or develop them in order to achieve some level of influence?

There is also a broader issue to address. The perception that the United States acts in a unilateral manner has increased markedly over the previous eight years. While there are various sides to this argument, there can be no denying that anti-Americanism has risen significantly in that time. Domestic opposition in other countries to housing an American antimissile shield will not deaden over time, nor will the perception that American foreign policy is one-sided in global conflicts. By installing antimissile sites in specific countries, by potentially transferring this technology through foreign military sales to allied countries, by promising protection to some and not to others, we offer a dangerous declaration. We state to the world that rather than adhere to the honest, universal ideals of civil liberty, justice, representative governance, and so forth, we are stooping to petty power politics and proxy wars. We confirm to those who might question our motives that we see the world as a chessboard free for us to manipulate by injecting money and arms into those areas we deem weak and refusing it to those we deem too strong. This is a seriously backwards way of looking at the world, especially one becoming increasingly interconnected. If we unilaterally spread our antimissile shield throughout the world, there will be no more confusion about the sources of anti-Americanism. The resulting instability of establishing a national missile defense system is too great to simply dismiss.

Alternate Priorities

Ultimately, what supporters of the NMD consistently fail to address is, rather than responding to the continued ratcheting of tensions, how can we reduce over time the tension and the threat. There are many answers, and rather than making missile defense a high-priority item, we would be better off making nonproliferation, arms control and reduction, confidence-building measures, and theater-based missile and air defense the higher priorities.

Since the Limited Test Ban Treaty (LTBT) was passed in 1963, many meaningful steps have been taken towards nuclear disarmament. Over the past 40 years, the United States has often championed this cause. We as a country are well aware of the dangers of nuclear war and the sacred responsibilities that possession of such weapons can create. As the only

country to have ever used nuclear weapons against another state, I think it is appropriate that we have often championed the cause of nuclear non-proliferation. The history of US nuclear policy has always been one of limitation and reduction. Starting with the LTBT and moving on through the Outer Space Treaty and the Threshold Test Ban Treaty, America has historically recognized the importance of limited testing. In addition, other agreements, such as the ABM Treaty, the Intermediate-Range Nuclear Forces Treaty, the Nuclear Non-Proliferation Treaty (NPT), Strategic Arms Limitation Talks, Strategic Arms Reduction Treaties, and the Strategic Offensive Reductions Treaty, have all demonstrated American dedication towards positive control of nuclear arsenals. President Bush's withdrawal of the ABM Treaty in June 2002 and the ensuing redevelopment and testing in missile defense have only served to tread on the important principles of these agreements. The United States was, in a better time, a noble steward of nuclear disarmament and nonproliferation. We can be that steward again.

We should continue to press for multilateral disarmament and move towards a reduction in the total number of deployed nuclear warheads and, ultimately, stockpiled warheads. This can be done by adhering to and enforcing the existing disarmament framework. This calls for the five recognized nuclear weapons states not to induce other NPT countries into developing similar weapons. By developing and deploying an antimissile shield, that is exactly what we are doing. However, more can be done. Instead of the current format, which many countries decry as establishing nuclear haves and have-nots, we can alter the NPT to more effectively address the goal of universal denuclearization and show the world that the United States is dedicated to this goal. Recent attempts to test tactical nuclear devices have not helped in that regard.

Those who argue for an NMD shield are all too often those who would rather choose the direct military option as a simple solution rather than consider more effective and far less destabilizing diplomatic tools (diplomatic, information, military, and economic). This could include pushing harder for countries of concern, such as North Korea, Iran, and Syria, to actively interface with organizations such as the Missile Technology Control Regime, the Nuclear Suppliers Group, and the like. Contrary to what some argue, further success is possible along these lines.

Specifically regarding Iran, the November 2007 *NIE* went on to state about its nuclear program that it "halted the program in 2003 primarily in response to international pressures" and that this "indicates Tehran's

decisions are guided by a cost-benefit approach rather than a rush to a weapon irrespective of the political, economic and military costs.”⁸ The report states that a combination of international scrutiny and pressure, along with opportunities for Iran to achieve security and prestige, might prompt further success. This combination of carrots and sticks is exactly the kind of effective, deliberate, and forceful diplomacy that serves American national security interests far better than a missile defense shield.

With North Korea, evidence suggests its history of nuclear weapons exportation is driven by basic monetary needs. Reports by the Central Intelligence Agency indicate that arms exports were “one of the North’s major sources of hard currency.” In December 2003, North Korea requested rewards in return for a cessation of its illegal arms exports.⁹ Such extortion can and should be pursued through aggressive diplomacy, not with fantastic and unproven weapons systems. This behavior indicates a deeper problem. The fact that North Korea is cash-strapped is no surprise to anyone, but it gives us something to work with. We certainly cannot make demands without compromise. By providing small cash, food, and fossil fuel incentives, we induce a slow return to the bargaining table, we provide for the impoverished people, and we take steps closer to eventual disarmament. There is no question that North Korea represents a very dangerous threat to American security, but political discussions, economic sanctions, and closer work with the six-party talks would be far more effective.

We can also actively communicate with those countries that feel threatened by external factors. India has expressed that part of its nuclear force is meant to counter China’s and Pakistan’s nuclear threat. Israel’s nuclear force, the region’s “worst kept secret,” is maintained due to ongoing threats against its own existence throughout the region. North Korea has insisted it is concerned by South Korean and American military presence in the region. These all represent regional security concerns. The United States can and should take the lead in resolving these oft-neglected conflicts. We can do that best by recognizing a state’s legitimate concerns and its right to self defense. We should push for the country to meet those self-defense requirements through conventional means. And if nuclear disarmament is not the most immediate option, we can move towards full declaration of nuclear arms, opening up countries like India, Pakistan, Israel, Iran, and North Korea to comprehensive and verifiable inspections by the International Atomic Energy Agency. We can also push for a greater suite of confidence-building measures. The composite dialogue between India and

Pakistan in 2007, for example, is a great example of how hotlines between national leaders and reformed command and control processes for nuclear launch decisions can reduce tensions. We can also push for countries to publish their nuclear doctrine, eliminating unstable ambiguities. India and China, for example, have had publicly declared no-first-use policies for some time and published drafts of their doctrine in 1999 and 2005, respectively.

The development of new weapons systems always begs the question of strategic utility. If a system itself does not meet the likely needs of the American military, then it is pointless to invest in it. As we have seen in Iraq and Afghanistan, the future of warfare looks asymmetric, dynamic, fluid, and mobile. It will not likely be rigid nor will it require the “garrison state” mentality that dominated the Cold War. The questions that will plague American military leaders will include: How do we strike at terrorists in hard-to-reach or politically sensitive regions? What is the best way to combat transnational actors that slip through borders heedlessly, including our own? How can we better prepare our forces for increasing urban operations? How can we integrate the broad range of military operations into our own advancing national security interests? The NMD does not provide for these strategic questions because it allows for no tactical answers.

One promising option is to use enhanced intelligence, both technology based and human based, to determine preparations for missile attacks and to use quick-strike methods to cripple those attacks *prior* to launch. Early detection would be easy, considering many of the missiles currently operated by hostile regimes are liquid-fueled and require extensive movement of people and equipment before launch, thus telegraphing any attack. Preemption can include direct attacks on the silos themselves as well as attacks on the command and control nodes of launch systems. Also, these attacks can be carried out by strike aircraft, Tomahawk-armed submarines, newly reconfigured Ohio-class submarines, or even soon-to-be-developed conventionally armed ICBMs, a capable yet responsible platform the Bush administration is actively pursuing. Further advances in strategic early warning are making this kind of early response more possible.

In addition, money currently being poured into NMD could be transferred to more promising programs. For example, the Joint Strike Fighter and F-22A are great airborne platforms that promise to maintain the quality of the Air Force fleet. Unmanned aerial vehicles have proven effective in combat theaters and present exciting and unprecedented technological advances. A new-and-improved tanker fleet would allow the Air Force to

continue to carry out its all-important airlift function. The Virginia-class submarine, capable of operating in littoral regions where, in all likelihood, the future of maritime conflict will occur, is also a great weapons platform that could provide the United States unhindered access to the world's coastlines. This submarine, and its accompanying ability to deliver Navy SEAL teams, would be a valuable asset in antiterrorist operations. Given the increasing need for mobile land platforms, the Army's Stryker vehicle is also a very promising weapons platform. In addition, dollars freed from NMD testing and research could be used for procurement of more "up-armored" humvees and defensive systems capable of neutralizing attacks by rocket-propelled grenades and improvised explosive devices.

Finally, let's distinguish between the broad NMD system being pushed by the White House and the theater missile defense (TMD) systems in use and development today. The TMD is technologically feasible, financially practical, and operationally necessary. In addition, it retains the sacrosanct concepts of MAD by limiting protection to deployed forces and nothing else. The vast majority of missile systems fielded by hostile regimes are short- and medium-range ballistic missiles, those with a maximum range of 3,000 kilometers. These missiles are more likely to be used within theaters of combat and would be vulnerable to TMD systems. During times of conflict, such as the wars in Afghanistan and Iraq, and especially during potential regional conflicts with China or North Korea, it is important that we are able to protect American military forces from the localized ballistic missiles used by rogue regimes. Also, by deploying the TMD only in support of our military forces, we convey an important message to other countries in the region. We make it clear that we have no intent of permanently altering power balances by leaving TMD systems in place to protect favored countries. Our TMD systems would be strictly for protection of US and allied forces during legal and internationally recognized combat events. TMD systems such as the Terminal High-Altitude Area Defense (THAAD), the Patriot Advanced Capability 3 (PAC-3), and Aegis cruisers armed with the Standard missile represent far more effective methods of integrating missile defense concepts into practical ways of waging war.

Conclusion

When the first atomic bomb detonated in July 1945, American political and military leaders immediately realized the potentially devastating impact

of this weapon. It was not long until we made the limitation of nuclear weapons access one of the fundamental precepts of American foreign policy, for reasons both altruistic and self-preserving. The Cold War provided far too many opportunities for the fallibility of man to give way to nuclear annihilation. This was a danger recognized beyond national boundaries and political ideologies. It was a globally shared fear and understanding that the end of humanity was in our hands. We recognized that hostility and antagonism had no place next to the lofty goals of nonproliferation and eventual disarmament. There is no reason why this should change now. As new conflicts arise, and they will, we must be willing to ask difficult but necessary questions. We must decide what the ultimate goal is and how best to accomplish that goal.

National missile defense is not the correct strategy. The current geopolitical spectrum does not warrant its development. The financial obligation to overcome the technological challenges would be obscene and, once accomplished, global instability would be insurmountable. It would ignite an arms race, exacerbate anti-American sentiment abroad, and push back our foreign policy goals by years. NMD is not the best answer to the critical questions. There are others.

We would do well to appreciate the successes, however minor, that have been made with regards to nuclear disarmament in the Middle East and on the Korean Peninsula. There is certainly still a long way to go, but we do not have to go it alone. Evidence suggests that the United States is greatest when leading a group based on a noble cause. And if we are willing to do so, we can take this cause to the world and seriously tackle the issues of nuclear disarmament. We can pursue nuclear nonproliferation actively. We can develop new reduction treaties and signal our dedication to a nuclear-free world by ratifying the Comprehensive Test Ban Treaty. We can stabilize the community of nuclear weapons states by pushing for formal declarations and doctrine. There are many promising weapons platforms that can and should be funded to maintain our strategic advantage in the midst of future warfare. We can successfully secure our interests and those of our allies with smart, informed decisions about the nature of future threats. With open dialogue and straightforward answers, we can engage in the strategic conversation and secure our future for years to come. **SSQ**

Notes

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Why Did It All Go Wrong?

Reassessing British Counterinsurgency in Iraq

Warren Chin

BRITAIN HAS a relatively good track record in counterinsurgency (COIN).¹ But as one journalist commented in 2008: “the war in Iraq has been one of the most disastrous wars ever fought by Britain. It has been small, but we achieved nothing.”² Although this view can be contested, it is clear that, if judged in terms of the original aim, Britain’s achievements fell far short of expectations set in 2003. A fundamental reason for this failure was the apparent ineffectiveness of Britain’s COIN campaign. The aim of this article is to explain why a strategy used so effectively in the past unraveled in Iraq. Specifically, it challenges the view that British failure in Iraq was inevitable or that it was the product of an outdated COIN strategy.³

Although the British accounted for only five percent of the entire coalition force, such an analysis is warranted for two reasons. First, British experience of insurgency in Iraq proved to be very different from that of the Americans, and it is important to address this divergence if only because it reveals a different aspect of the campaign to stabilize the country. Initially at least, the British area of operations in the Multi-National Division (South-East) [MND(SE)] presented a relatively benign environment: there were no global insurgents, little sectarian conflict, and the six million people living in the MND(SE) were primarily Shia Arabs, most of whom welcomed the downfall of Saddam Hussein. Why then did the people rebel against the British, and why were the British unable to deal with insurgent groups which began to blossom in the south?

This last question leads into a second line of inquiry. British experience in Iraq appears to confirm the view that British COIN doctrine cannot deal with the new challenges posed by insurgents today and that, consequently, this strategy is obsolete. It is true that British counterinsurgency

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doctrine emerged in response to the challenge of maintaining imperial control over its colonies where local populations embarked on nationalist struggles of independence. This strategy also played a critical role in managing Britain's withdrawal from the empire and was used to good effect to ensure that pro-British governments were established in former colonial territories. During this period the British built up a body of knowledge based on Charles Caldwell's *Small Wars* (1896), Sir Charles Gwynn's *Notes on Imperial Policing* (1934), a government pamphlet called *Imperial Policing and the Duties of Aid to the Civil Power* (1949), Sir Robert Thompson's *Defeating Communist Insurgency* (1966), Julian Paget's *Counterinsurgency Campaigning* (1967), and Frank Kitson's *Low Intensity Operations* (1972). These various commentaries informed and shaped British counterinsurgency strategy and have been distilled into a series of principles that shaped the British army's approach to counterinsurgency. These principles are as follows:

1. maintain political primacy over the military and focus on finding a political solution to the conflict;
2. apply a coordinated government and security infrastructure which ties all civil, police, and military agencies into a coherent campaign;
3. develop an effective intelligence and surveillance network;
4. separate the insurgents from the people;
5. neutralize the insurgent; and
6. look forward to the future in terms of postinsurgency planning.⁴

The application of this framework placed a great deal of importance in terms of addressing the economic, political, and social causes of the insurgency. It also stressed the discriminate use of force and focused on winning the trust and support of the civil population. In essence, it recognized that the people rather than the insurgent's forces were the center of gravity. Using this "formula," the British were able to achieve success in Malaya (1948–60), Borneo (1963–66), Oman (1970–75), and most recently, Northern Ireland (1969–98). Most important, failures such as Palestine (1945–48), Aden (1963–67), and Cyprus (1955–59) came to be explained in terms of a failure to adhere to these principles, which served to reinforce the power of this approach.

The war in Iraq, and more recently Afghanistan, provoked a debate about the current utility of this doctrine. Initially it focused on the conduct of the US military in Iraq and the belief that a more British or classical COIN

strategy, as it was termed, needed to be applied against the insurgency that was rapidly spreading amongst the Sunni population.⁵ However, this critical analysis of strategy very quickly infiltrated discussion within the British media, the military, and academia and focused on the deteriorating situation in the MND(SE). This debate centers on two main arguments. The first relates to the changing environment in which COIN is conducted.⁶ The logic holds that such a construct worked well in Malaya and subsequent campaigns because the British were able to exploit a functioning colonial administration and security apparatus to fight and defeat the insurgency. Equally important were the strong cultural and social links, which stemmed from long exposure by the British to the environment and the people and gave the British security forces at least some sense of how to engage the population. Where this understanding was absent, for example in the Southern Arabian Federation in the 1960s, failure followed.

In theory this is a cause for concern because, while it is clear that British COIN doctrine proved a useful construct, even in the post-imperial era such as Oman in the 1970s, there is profound skepticism that such a strategy will work in this new setting. There is no government infrastructure and little appreciation or understanding of the target state by the intervening force.⁷ The challenge then is to create these pillars in the vacuum that exists.⁸ Failed states have also resulted in the proliferation of armed groups which compete with the state's forces for control. This means that a COIN campaign must now deal with a number of opponents rather than just one which, as Steven Metz explains, makes it more difficult to establish security or implement an effective conflict termination strategy.⁹

Second, the nature of insurgent strategy has changed. According to the likes of Metz and John Mackinlay, insurgency in the Cold War was based largely on the Maoist model of revolutionary war, and British COIN doctrine evolved to address this threat. In simple terms this strategy entailed a protracted conflict in which the insurgent moved progressively through three phases of revolution. The first focused on political mobilization and the establishment of a shadow government. The second envisaged the move to guerrilla war. Finally, when the government was sufficiently weak, the insurgent strategy would shift to open, conventional war.

The end of the Cold War made the application of this strategy problematic. This was caused in part by changing environmental conditions. Maoist revolutionary war was designed to operate within a rural setting, but the world was becoming increasingly urbanized—a trend that is very apparent

in Iraq, where over 70 percent of the population lives in cities and towns.¹⁰ The application of this strategy has also become more difficult because of change in the political domain. Of particular importance here has been the decline of secular ideologies such as Marxism and Maoist political thinking and the rise of ethnicity and religion as sources of internal conflict. The reasons for this reversion to more basic and reactionary forms of identity have been linked to the social and economic impact of globalization,¹¹ but their effect has been to limit the utility of both Maoist insurgency and British COIN, because both assumed that the loyalties of a community were not fixed and could be won via promises of political and economic reform. Although this argument is controversial, it is clear that religion and identity in the form of conflict between Shia and Sunni or Sunni and Kurd played an important role in shaping the internal war in Iraq. Finally, materiel constraints also limited the extent to which insurgents could mimic past revolutionary wars. This was caused by the decline in support the great powers provided. The most obvious aspect of this decline in external support was that insurgents had limited access to heavy weapons. This made it almost impossible for a movement to progress from guerrilla to open, conventional war and overthrow the existing regime. As Metz explains, the lack of a state sponsor often precluded strategic victory in the way Mao and Ho Chi Minh realized this goal; they simply did not possess the means.¹² In some cases, such as Peru and Columbia, the lack of an external patron was compensated by the insurgents' ability to exploit internal sources of wealth derived from the drug trade and organized crime. However, rather paradoxically, access to this resource did not result in a renewed commitment to the three phases of revolutionary war. Instead it allowed insurgent groups, such as the FARC in Columbia, to abandon the preparatory phases of this process and move quickly to a direct and open attack against the state and its armed forces.

How then have resource-constrained insurgents attempted to deal with this challenge? Col Thomas Hammes and the fourth-generation warfare school argue that modern insurgent strategy now consciously seeks to bypass the opponent's military capability and focuses instead on fighting its war in the political domain. In this context military action is concerned with bringing about the moral collapse of the opponents by attacking their domestic political support base during wartime.¹³ This shift in strategy reflects an increasing trend for insurgent groups to exploit new technologies as a way of generating new asymmetries. In the case of the British, Mackinlay argues that British COIN has failed to recognize that

insurgency has adapted to take advantage of new technologies in terms of mass communications, cheaper transport, and the easy transfer of money across the globe.¹⁴ Most important, these developments require a COIN campaign to engage in a propaganda war that extends beyond the insurgent state to incorporate diaspora communities who have sectarian links with the insurgents but who are living in other countries, including the intervening state.¹⁵

The net effect of these changes has been to create a very different insurgent type which, it is argued, requires a new counterinsurgency strategy. So to what extent does this picture of radical change coincide with what happened to the British in the MND(SE)? If we look first at the environment, Kaldor has argued that Iraq was a failing state even before the war in 2003. An artificial political entity containing a volatile mix of ethnic and religious groups brought together to satisfy the imperial ambitions of the British after the First World War, its history was one dominated by violence, instability, and frequent coups.¹⁶ Ba'ath efforts to consolidate control over Iraq through the exploitation of its oil wealth and the promotion of a secular ideology proved effective in creating a relatively cohesive state. However, this nation-building project was undermined by eight years of war with Iran, followed by the disastrous invasion of Kuwait in 1990 and the UN-imposed sanctions regime, which lasted until 2003. As a result, the Iraqi state was effectively divided with the establishment of Kurdish autonomy in the north after 1991. In the south, the Ba'ath Party struggled to reimpose control, and approximately 100,000 Shia were killed in the uprising that followed Iraq's ejection from Kuwait in 1991.¹⁷ The brutality of the Ba'ath government's repression of the Shia and the impact of the UN sanctions regime, which resulted in a catastrophic fall in living standards, caused the regime in the south to unravel. To compensate, Saddam relied increasingly on tribal and religious politics, both as a basis for generating support and to create new networks of control and patronage.¹⁸ In parallel with these developments was the rise in criminality caused by the introduction of the oil-for-food program in 1996, which provided ample opportunities for smuggling and bribery. "Hence, on the eve of the invasion, Iraq was showing all the signs of incipient state failure."¹⁹

It is clear the British were shocked by the conditions they faced as an occupying power in the MND(SE)—a problem compounded by their failure to stop the orgy of looting that took place after the downfall of the Ba'ath government.²⁰ What this meant in practical terms was that stability

depended on achieving four key goals: (1) the establishment of a viable economy, (2) the provision of essential services, (3) stability and security, and finally, (4) governance. Failure in one of these domains was likely to impact on the other areas to produce strategic failure.²¹

As previous British campaigns demonstrate—although the scale of the problem was greater in Iraq—such broad policy actions had always been an implicit part of British COIN. Moreover, COIN doctrine provided the British with a model of bureaucratic management to coordinate such diverse activities. In past campaigns, the British set up a system of committees operating at the national, provincial, district, and local levels of government, which included the police, intelligence services, military, and all principal civilian departments of state. This system was designed to secure and protect the population; win their active support via psychological, political, economic, and social programs; and actively cultivate intelligence sources within the community so that a discriminate and proportionate COIN campaign could be waged against an opponent. The contemporary relevance of this construct can be demonstrated by the way it continues to influence thinking on this topic today.²²

Reconstructing this apparatus in Iraq was affected by two problems. The first was the absence of a functioning local administration with which the military could coordinate its actions, and this meant importing expertise and resources from the UK and the Americans via the Coalition Provisional Authority (CPA). The relationship between the British and the CPA also proved problematic. In theory, the British MND(SE) commander acted under the broad direction of US military commanders in Baghdad while coordinating with the CPA South on reconstruction. Therefore, a strong expectation existed within the British government and military that the CPA would focus on supporting reconstruction and development in this region. Unfortunately, in the view of Paul Bremer, head of the CPA, the MND(SE) was not a priority; for Bremer the center of gravity was Baghdad and its environs, and that is where the lion's share of the CPA reconstruction effort was focused.²³ As a result, the CPA only slowly established itself in the MND(SE) and when it did so, its mission was, as Rory Stewart, a CPA advisor in Maysan explained, not concerned with running a development operation. Money given to him by the CPA was supposed to support his political work and making friends, not redeveloping the MND(SE). But even had there been a commitment to reconstruction and development in the MND(SE), the CPA lacked the

necessary key skills. What it needed was a head with experience of running a large municipal authority. It also needed experts in the provision of public education, health, and management of utilities, but such expertise was virtually nonexistent in the CPA.²⁴

The second problem lay in getting British agencies to deploy and then coordinate with the military. To succeed, it was imperative that government departments were willing to support the army in its endeavors. Although in theory these departments of state should have been directed and controlled by a cabinet subcommittee under the chairmanship of the foreign secretary, in reality no leadership was forthcoming. The committee met infrequently and was therefore unable to build a cross-departmental consensus on how to approach problems being faced in southern Iraq.²⁵ The Iraq experience led to a series of new doctrinal, procedural, and organizational initiatives to promote greater coordination on the ground in post-conflict states, but this came too late to make a real difference in Iraq. For example, the UK Stabilisation Unit, which coordinates post-conflict reconstruction, began operating in Iraq only in 2006, and the first provisional reconstruction team was set up later that year.²⁶

The riots on 9–10 August 2003, caused by the failure of the British to restore basic services to the population, made the British government realize how tenuous its hold on the region was and how desperate was the plight of the people. As a result, the government accepted that it would be responsible for orchestrating the reconstruction and stabilization of the MND(SE) and, equally important, provide significant funding to facilitate this process. In response, the UK finally approved £500 million for reconstruction, but five months were lost before this money became available. Although that sum was subsequently increased in 2007 to £700 million,²⁷ it was still short of the estimated \$7.2 billion engineers believed was needed to repair the region's physical infrastructure in 2003.²⁸

In essence, lack of support to the military as much as the complex environment explains British failure in the MND(SE). According to one military source, there was no coordinated plan and the military leaders were left to prepare and execute their own agenda. To this end they set out their own objectives and used their own resources to improve essential services and the economy. Initially, they tried to buy time by implementing a series of quick-impact projects funded via the Commander's Emergency Response Fund. The military were involved in all four lines of operation—security, governance, reconstruction, and long-term development—without the

support of other government departments. In terms of governance, senior officers were deployed as provincial governors; they helped establish businesses and projects. British forces on Operation Telic 2 (July–November 2003) reported that they had not been briefed on nation building before deployment, and there was no interaction with the Foreign Office or the Department for International Development. As a result, the army's civil affairs group ended up doing the work of other governmental departments. It also became clear that the CPA lacked the skilled personnel to implement reconstruction and was forced to rely on the British army to provide key personnel. Even the CPA's development plan for the MND(SE) was based on the army's Emergency Implementation Plan devised in August 2003. Once the Iraqi interim government was established in June 2004, the British reduced their nation-building activities and focused on security sector reform.

What then of the insurgents? Superficially, the plethora of armed groups in the MND(SE) and their multiple agendas conveys the impression of a "post-Maoist insurgency." Although al-Qaeda had no physical presence in the area, it was able to capitalize on the alienation of a minority of British Muslims who conspired to carry out a series of terrorist attacks on the UK mainland as a protest at Britain's war against Islam.²⁹ Incidents like the torture of Iraqi looters in 2003 and the murder of a hotel clerk, Baha Mousa, in 2004 also provided powerful propaganda to insurgent groups in Britain and Iraq.³⁰

Appearances can be deceptive, however, and it is the contention of this article that the main political groups in the MND(SE) had more in common with a Maoist as opposed to a post-Maoist insurgency. These groups were not interested in communicating with the populace of the intervening state; rather, their focus was on the Shia population in Iraq. Moreover, the vast diffusion of parties which came into existence in 2003 increasingly came under control of three Islamist groups, which were structured and organized in a familiar and orthodox manner. The principal Islamist parties in the south were the Islamic Supreme Council of Iraq (ISCI), the Sadrist movement, and the Fadhilla Party. All three acted in a rational if opportunistic way to increase their power and, as such, cooperated with the British when it suited them and attacked when it did not. A similar attitude prevailed in terms of their relationship with the central government. It could be argued that such action does not constitute an insurgency, but this is naïve. A cursory glance through history shows that the Chinese

Communist Party, the classic insurgent force, was willing to form an alliance with the Nationalist government on two occasions before finally overthrowing it. Moreover, it is also clear that the parties in Iraq had a common agenda in that they opposed the creation of a secular government and wanted an Islamic republic.³¹ This attitude was very apparent when the British took over, and all such groups tried to subvert British efforts to reestablish governance in the south. As Allawi explains:

Iraq's inhabitants did not meet the invasion with joyous scenes of welcome for a liberating army. The collapse of the decades-old dictatorship left a power vacuum, especially in the South and the poor Shi'a suburbs of Baghdad. Islamist forces and their allies, who laid claim to the loyalty of the population, quickly filled the power vacuum. Parallel power structures evolved in nearly all towns and cities of southern Iraq, but they remained undetected by officials installed by the occupying authorities.

The speed and extent of the Islamist wave that swept over Shi'a Iraq was as if a tsunami had silently and very rapidly spread to cover the south. No one had predicted the strength of this wave and the depth of support it engendered amongst the poor and deprived population of the area.³²

Influence and control were achieved by traditional means. In the case of the ISCI, it used Iranian subsidies to buy influence in the south, and it is claimed that during the war in 2003 large elements of the ISCI and its armed wing, the Badr Corps, infiltrated across the border, seized many of the district towns, and established their own political and security apparatus in areas like Maysan.³³ In contrast, Moqtada al-Sadr reactivated a political and religious movement which had been created by his father but driven underground by the Ba'ath government. During that time it continued to provide support to the Shia through the local mosques and charities. Thus, when the Ba'ath government collapsed in 2003, Moqtada al-Sadr was able to mobilize a latent network of support amongst the Shia and establish his movement as a dominant force in Shia politics. Later, Sadrist militias also drew on Iranian material and financial support to conduct increasingly sophisticated attacks against the British.

What is particularly interesting is how the Islamist groups in the MND(SE) were able to crowd out other nascent political organizations and even suppress or incorporate tribal militias. The emergence of a secular opposition was limited because Saddam's internal security destroyed secular opposition parties.³⁴ In spite of this, in 2003, 22 of 38 political parties that emerged in the south were secular in nature, but the Islamists

very quickly came to dominate.³⁵ This was caused in part by the British, who seemed ready to ally with organizations like the ISCI to the extent that they ignored the activities of its militia. Moreover, a genuine effort seems to have been made to reach an accommodation with all the Islamist parties, including the Sadrists.³⁶

The dominance of religious parties was reinforced by a failure to provide physical security to the wider populace. According to one CPA official in the south, this was the critical weakness of the occupation in the MND(SE).³⁷ The inability of the British to fill the security vacuum allowed the armed Islamist parties to remove any opposition to them. Through the use of targeted violence, such groups eliminated alternative sources of political activity. This included members of the former regime, the tribes, and eventually the secular elements of the middle classes, who were forced increasingly to look to the Islamist militias for protection.³⁸

The fundamental problem was that the British did not have sufficient force to control the MND(SE). Overall, troop levels fell drastically during the summer of 2003 from 26,000 to 9,000 to cover four provinces, and in 2005 there were only 7,200 British troops in the region plus small contingents from other countries. This meant that forces on the ground were stretched thinly. In 2003 the British deployed a force of 1,000 troops to provide security in Maysan, an area the size of Northern Ireland, which included the city of Ammara with a population of over 400,000. This also entailed deploying a force of just 70 soldiers to secure a 200-mile border with Iran.³⁹ In the case of Northern Ireland, however, the ratio of soldiers to civilians was approximately 1:50; in the case of Iraq that ratio was 1:370.⁴⁰

Improving the security situation was also hindered by the British failure to secure all the arms dumps in the area under their control. By February 2004, UK forces had disposed of 680,000 tons of munitions. However, this was only a fraction of the total tonnage of ordnance left behind in the south, and the British admitted that of the 62 captured ammunition sites recorded, they had only cleared 13.⁴¹ A report published by Human Rights Watch noted that many of these sites were located in urban areas and were easy to access. Not only did this represent a significant safety threat to the civilian population, it also provided insurgents with a readily available supply of ammunition.⁴²

The biggest problem initially was the extensive criminality in the area. According to Toby Dodge, organized crime accounted for 80 percent of

the violence in Iraq. Organized crime, which focused on oil smuggling, existed during the time of Saddam Hussein and flourished in the 1990s, as sanctions took effect and the regime's control of society declined. Such groups flourished in the chaos of the occupation, the absence of law and order, the ready availability of small arms, and the lack of intelligence about Iraqi society.⁴³ The initial British response to these security problems was not that dissimilar to the Americans, in that they tried to increase their presence on the streets through frequent patrolling. In Basra, the British undertook between 1,000 and 2,000 patrols per week. Inevitably this brought the army into conflict with thieves, carjackers, kidnappers, smugglers, and even pirates, but there was also an element of Islamist and nationalist attacks, suggesting political opposition to the occupation.⁴⁴ Unfortunately, establishment of this military presence caused conflict between the people and the army. It appears that the British were as culturally unaware as their American counterparts when attempting to establish security.⁴⁵ In June 2003, six military policemen were killed by a mob over the British army's efforts to seize all firearms possessed by the civilian population. Apparently, the city of Majar al Kabir had proved ungovernable, even during Saddam's reign, and had liberated itself from Ba'ath rule, so its citizens did not perceive the British as liberators when they arrived. British efforts to establish law and order in the city through random house searches and the use of dogs to search for explosives resulted in sporadic fighting between locals and the British. It was in the midst of this violence that the MPs were trapped in the local police station and killed by protesters. This demonstrated the conditional nature of the support for the occupation in the south.⁴⁶

An obvious solution to the problem of a lack of troops was to use the existing local security apparatus to supplement and reinforce British actions. Indeed, the British had assumed that a functioning Iraqi police force and army would be available to impose stability and security. To this end, they attempted to reactivate the local Iraqi police, and by May 2003, more than 900 police were available for service. However, it soon became clear that the police were ineffective, because under the Ba'ath government, law and order in southern Iraq was provided by the military and the Ba'ath intelligence services; the police functioned merely as the eyes and ears of those agencies and were not trained to sustain law and order.⁴⁷ These weaknesses were compounded by the process of de-Ba'athification, which removed what little leadership existed within the local police force.⁴⁸ This

effectively meant that local policing became the responsibility of the British army. However, it was hindered in this process because it did not possess any real knowledge or understanding of the various criminal gangs. Confronted by violence and obvious criminal acts, the army found it impossible to identify who the real culprits were and, as Sir Hilary Synott points out, arresting everyone simply caused antagonism and ill feeling within the local community.⁴⁹

The security situation in the MND(SE) was made worse because of the decision to demobilize the Iraqi military. This and the decision to carry out de-Ba'athification are probably two of the most controversial decisions made by the CPA and had a significant impact on Iraq's security and stability. In a country where 40 percent of the adult population was already unemployed, this served to reinforce Iraqi anger and provided the militias with access to a vast pool of trained manpower.⁵⁰

Confronted by a deteriorating security situation, tribal and religious leaders began raising their own militias. Synott explains that the British adopted what he describes as a more "nuanced approach" to this trend than the CPA, which attempted to ban all militias. The lack of a more robust response to this disturbing phenomenon was based on the realization that it would prove militarily impossible to impose such a ban and the recognition that there were good reasons why people were trying to organize security in their local area.⁵¹ However, this did not provide a satisfactory long-term solution, and the British were forced to begin the process of reconstructing the state security apparatus. This entailed not just the recruitment and training of a national army and police force but also the establishment of a judicial and penal infrastructure which could deliver justice.

The British faced a series of problems in achieving this goal. The first and most important requirement was the creation of a brand new police force, but the army did not have the training or manpower to provide this facility, and the Home Office and British police showed a strong aversion to becoming involved. An inability to disarm the militias sometimes resulted in the rather bizarre arrangement of absorbing them into the police. This at least is what seems to have happened in Maysan.⁵² Given the urgency of the situation and the pressure on the British to do something, they decided to go along with these arrangements and badged these forces as policemen; only Sadrist forces were excluded. Subsequently, the British were heavily criticized for the lax hiring policy when recruiting for the police

and the army. The only restriction imposed was that those who served in the Iraqi intelligence services, the Fedayeen Saddam, or the Ba'ath party were not allowed to apply.⁵³ As a result, the security services were heavily infiltrated by the militias and provided a convenient cover to instigate violence against known opponents. According to one source, 80 percent of the murders in Basra in 2006 were orchestrated through the police.⁵⁴

According to one observer, COIN is won or lost in the first 100 days.⁵⁵ The examples of Malaya and Northern Ireland demonstrate that this is not true in all cases, and perhaps a greater investment on the part of the British in 2003 and 2004 might have halted the deteriorating situation in the MND(SE). However, events beyond British control served to exacerbate an already precarious situation. These external forces are important because they also challenged the logic and coherence of British COIN doctrine.

The first of these upheavals was caused by the CPA's political and economic policies, which amounted to optimism-run riot and served only to alienate and anger many Iraqis. The second was the CPA and the American military decision to target Moqtada al-Sadr in 2004. The repercussions of this conflict spread rapidly into the MND(SE), where there was a significant upsurge in attacks against the British. In July 2004, British forces suffered only seven attacks, but this increased to over 850 assaults on British patrols and bases in August 2004 at the height of the Sadrist uprising.⁵⁶ The third was caused by national elections and the delay experienced in creating a new government in 2005. This resulted in an increase in militia violence in the MND(SE) as the various parties jockeyed to improve their relative positions.⁵⁷ The fourth factor was the ongoing violence caused by the conflict over resources.⁵⁸ This was not confined to control of oil smuggling, but extended to the Iraqi state itself. Control of government ministries and, more importantly, the security services provided an important source of money and resources. As a result, the principal militias in the MND(SE) had representation at the local, regional, and even national levels of government. In the case of Basra, the Fadhillah Party controlled the post of governor, the oil protection force, and the customs police force. The ISCI had representation in the intelligence services, and the Sadrists controlled the local police. As a result, the British found themselves in a situation where action taken against the militias caused the local or provincial government and/or police to intervene to protect the militias.⁵⁹ The last key milestone in the breakdown of relations between British forces and the Islamists was the decision to take action

against a police intelligence unit known as Jamiat in September 2005. This unit was under the control of the militias, and it was known that two British soldiers had been captured and handed over to them. Military action was taken to release the men but resulted in significant clashes with the local population. In response to this attack, Basra's governor, Muhammad al-Waeli, condemned the British, and the Islamist-controlled provincial council suspended cooperation with the British.

Thereafter, the British played an increasingly marginal role in the MND(SE), and questions were asked about the continuing utility of having British forces in Iraq. The British seemed unable to stop the mounting violence and increasingly became the focus of attacks by the militias. In late 2006, the chief of the General Staff declared that the British had overstayed their welcome and were now part of the problem rather than the solution. Operation Sinbad in late-2006 and early-2007 was Britain's last effort to establish security and stability in Basra, but this offensive provided only temporary relief, as the militias simply retreated in the face of clear-and-hold operations launched by British forces and then returned once the British left. The increasing number of attacks against the British garrison in Basra, which peaked in August 2007, is evidence of the limited success of Sinbad. So bad was the situation that the British decided to withdraw their garrison from the city to Basra Air Station in September. By the end of 2007 the British officially handed over Basra province to the Iraqi government and declared the end of their combat role and the move to "overwatch," which entailed continuing the mentoring of Iraqi forces and provision of military assistance if requested.

Conclusion

In this short article I have attempted to show that British failure in Iraq was not due to a new kind of insurgency, and whilst the environment proved challenging, this did not make defeat inevitable. There appears to be a broad consensus that many of the errors made by the British and the United States were avoidable rather than preordained. A properly coordinated and resourced phase IV plan implemented in 2003 might have allowed the British to exploit the window of opportunity that existed in the early stages of the occupation and generated stronger support for the continued presence of the British in the years that followed. Winning in the MND(SE) required the British to provide physical security to the

populace along with sufficient aid so that the people looked to the British rather than to the Islamists for support. Most important, the creation of economic and social networks within the Shia community might also have resulted in a better intelligence picture, which is vital in a COIN campaign and yet was clearly missing in the MND(SE). British efforts to win the support of the people were affected by the CPA and the American military, but the critical failure was the British government's unwillingness to accept its role as an occupying power or the financial liability it entailed. Ironically, British experience in Iraq demonstrates that failure was not due to an obsolete doctrine but happened because the British never implemented a proper counterinsurgency strategy. Whether this strategy is viable in other conflicts is open to question, and clearly there are new challenges in terms of alliance politics and dealing with a potentially uncooperative host government, but these were not insuperable problems, and their importance in Iraq was amplified by poor decisions made in London. The political will to prosecute a COIN campaign was clearly lacking within the British government, and eventually even the military's "can do" attitude steadily eroded, as it became clear that it did not have the resources or political direction to contest the key center of gravity in Iraq: the people. **SSQ**

Notes

1. See Thomas Mockaitis, *British Counter Insurgency in the Post Imperial Era* (Manchester, UK: Manchester University Press, 1995).
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Book Reviews

Why the Middle East Lagged Behind: The Case of Iran by Kazem Alamdari.
University Press of America, Inc., 2005, 343 pp., \$44.00.

Having a strong personal interest in the Middle East and a minor area from my doctoral program, once or twice a year I teach a course on the history of the Middle East. At least one student always asks why the great Islamic civilizations of the Middle East declined in power, scientific and technological advancement, and cultural achievements after the seventeenth century, while the West outstripped them in these areas. As a result, some even see “a clash of civilizations” between the West and the Middle East. World history surveys usually offer nothing more than symptoms as reasons for the waning of the Middle East, not basic cause(s) for its decline.

Bernard Lewis in *What Went Wrong? Western Impact and Middle Eastern Response* (2002) argues that the states of the Middle East, dominated by Islam, created totalitarian regimes whose rules not only made them too static to adapt and compete with the increasingly secular West but also rejected Western ideas and technology as inferior. The West, however, starting with the Renaissance, progressively became more secular and freed itself from “religion” to contemplate intellectual and scientific innovations. These factors, in turn, led to economic and social changes after the mid-1700s which have continued to the present. Thus, Western secularism and freedom of thought lay at the foundation of the widening political, military, and economic power disparities between the West and the Middle East.

In a cogently argued book, Kazem Alamdari, an adjunct professor of sociology at California State University—Los Angeles with a doctorate from the University of Illinois at Urbana-Champaign and the author of many books and articles on the Middle East, places the cause for the waning of the Middle East and the concomitant waxing of the West at an even more fundamental level. Using a Marxist framework, he states in Part I that capitalism—developed from the breakdown of the medieval feudal system—became “the engine” that drove modern development in the West. The feudal system produced the “capitalist mode of production,” which caused the demise of the feudal system and produced a capitalist society by the late 1700s, along with the separation of church and state, secularism, and freedom of thought.

However, according to Alamdari, the Middle East in general and Iran in particular never experienced feudalism, despite the claims of some authors. Climate—the shortage of water—dictated a land-tenure system by which the “king” owned all (or most) of the land for the development of large-scale irrigation systems by the government to provide water for agriculture. Over time, the ruler gave portions of “his” land to subordinates, most of whom became

absentee landlords, but the ruler retained legal ownership. As a consequence, the Middle East never developed the capitalist mode of production, and the rest is “history.”

In Part II of his book, Alamdari examines the history of land reform in Iran between 1961 and 1981. Influenced by Western developmentalists and pressured by the United States, Shah Mohammed Reza Pahlavi instituted a land reform program that theoretically would give the peasants land for them to develop the capitalist mode of production and also produce a surplus of non-landowning peasants who would then migrate to the cities and become industrial workers; in other words, replicate the pattern of Western Europe after 1600.

However, this land reform program favored traditional landowners. Only a small percentage of peasants obtained workable portions of land, and millions of peasants, unable to purchase substantial amounts of good land, migrated to the cities. Over the next 20 years, new “land reform” laws continued to favor traditional landowners while causing peasants with marginal lands to lose their land, migrate to the cities, and join millions of other former peasants as unskilled workers. Ironically, these increasingly discontented workers became converts to political Islam and overthrew the Shah in 1978. To date, the mullahs, the real power in today’s Iran, have yet to institute a real land reform program.

After getting through the Marxist verbiage, I found a well-argued case that the land-tenure system in Iran (and, by extension, much of the rest of the Middle East), dictated by the scarcity of water, prevented the development of a viable and sizeable middle class like the one that spearheaded the development of democratic government, spurred economic growth, and made the scientific and technological achievements that allowed the West to advance. This land-tenure system instead supported the establishment and continuance of “oriental” despots, who ruled arbitrarily and oppressively and favored the status quo instead of progressive development, and the Middle East went into relative decline.

Given his Marxist approach, Alamdari, however, ignores the influence of other factors, especially Islam, on the growing gap between the West and the Middle East. As a minimum, he could have noted how Islam as a religious belief system supported the continuance of the land-tenure system, prevented the creation of a legal system that protected private property, and gave legitimacy to oriental despotism. This absence is especially noteworthy since he discusses the Catholic Church in medieval Europe as a competing institution—along with kings, lords, vassals, and townspeople—and increasing secularization as Western Europe transitioned from feudalism to capitalism. It would have added a significant dimension to his argument since Islam, politics, economics, and social development are inextricably intertwined in the Middle East.

Given the continuing volatility of the Middle East and Iran’s growth as a regional power, it is important that senior leaders and decision makers understand why the Middle East in general and Iran in particular failed to develop a “capitalist” society, which led to the present developmental—and cultural—gap between the West and the Middle East. For example, we need to understand

that when Pres. George W. Bush stated that an objective for the March 2003 invasion of Iraq was the establishment of (Western-style) democracy, such a pronouncement was made to gather public support for the invasion and displayed the president's ignorance of the Middle East, or possibly both. Those knowledgeable about the Middle East know that Iraq (Iran and most of the Middle East) does not presently have the political, economic, or social institutions for Western democracy. Alamdari presents a well-argued economic determinist view and offers significant insights but is not comprehensive or holistic.

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War of Annihilation: Combat and Genocide on the Eastern Front, 1941 by Geoffrey P. Megargee. Rowman & Littlefield Publishers, Inc., 2005, 208 pp., \$24.95.

Geoffrey Megargee, a research scholar at the Center for Advanced Holocaust Studies and an award-winning military historian, draws upon the latest scholarship on Wehrmacht crimes and the newest literature on Operation Barbarossa to present a synthetic overview of a campaign conceived from the start as a war of annihilation between peoples rather than militaries. He seeks to provide an accessible and engaging work that integrates strands of scholarship that have run in parallel but only infrequently interacted with one another, specifically the military history of Barbarossa and scholarship on genocide and war crimes on the eastern front. Published as part of the *Total War: New Perspectives on World War II* series by Rowman & Littlefield, this short study makes no claim to be definitive or to present startling new interpretations but rather seeks to present an analysis that does not artificially separate the twin motors of Germany's quest for lebensraum in the East: combat and genocide.

Megargee breaks his study into six chapters, followed by a brief bibliographical essay surveying the latest English-language literature on the topic. Chapters 1 and 2 address "The Roots of the War of Annihilation" and "Plans and Preparations, 1940–41." Megargee's discussion of the impact of World War I, the weltanschauung of the German officer corps, and Nazi concepts of racial order and lebensraum reflect long-standing interpretations of the underlying roots of German ruthlessness in World War II. Drawing upon more recent literature, Megargee argues that the German military prosecuted the Polish campaign with brutality predictive of its behavior two years later. During the planning phase of Barbarossa, the German military laid the groundwork for a brutal campaign of annihilation, issuing directives for the murder of captured political officers, recommending harsh collective actions against civilians in the event of sabotage or partisan activity, willfully creating conditions that led to the deaths of millions of Soviet POWs, and blending military, racial, and political categories in such a way that antipartisan operations might entail the elimination of any group deemed objectionable. Far from objecting to Hitler's and Himmler's conception of the upcoming campaign against Russia as a pitiless racial war of extermination, German military planners contributed to its upcoming brutality.

Chapters 3 through 5 cover the campaign itself, carefully describing the course of military operations against the Red Army and then addressing developments behind the front lines, specifically German policies toward and treatment of captured Soviet soldiers, the civilian population in the occupied territories, and Jews.

Chapter 6 brings Megargee's study to an end with an analysis of the failure of Operation Typhoon, Germany's final offensive of 1941, and a discussion of why Operation Barbarossa foundered upon the rocks of Soviet resistance, poor intelligence, and predictable adverse climatic and geographic conditions. Given that both military operations and rear-area mass killings continued for another three and one half years, this endpoint seems more driven by the publisher's desire to keep the volumes of *Total War* brief and tightly focused rather than any particular turning point in the nexus of combat and genocide.

Megargee introduces his readers to major historiographical controversies from military history—such as whether the Ukraine or Moscow should have been the focus of German offensives in August 1941—and from the field of Holocaust studies, such as exactly when Hitler decided that the “Jewish Question” would be resolved by the physical extermination of all Jews within the grasp of German power. He provides numerous shocking statistics and anecdotes that illustrate the interaction between military operations and mass murder. Two will suffice. In July and August 1941, the 2d SS Cavalry Brigade participated in antipartisan operations in the Pripet Marshes, shooting 13,788 people at the cost of two dead. This correlation of “partisans killed” to “casualties suffered,” echoed in countless other reports to German headquarters, indicates that antipartisan and reprisal operations served as cover and euphemism for mass killings, with unarmed Jewish men, women, and children the favored targets. On a related note, most military histories provide detailed analyses of how German armored groups broke through, exploited, and encircled Red Army formations during the summer and fall of 1941. Fewer accounts discuss how German supply and transportation priorities, coupled with willfully brutal and uncaring policies toward Soviet POWs, resulted in the death of some 1.4 million Soviet POWs by the beginning of December. Megargee successfully links front-line operations and classical military history with German occupation and military policies that not only tolerated but also endorsed the deaths of millions of Soviet noncombatants through execution, starvation, and mobile killing operations against Jews.

War of Annihilation provides a number of insights and warnings to those interested in or responsible for strategy and policy planning, execution, and analysis. First and foremost, it provides a warning that ideological worldviews based on unquestioned cultural assumptions serve as no substitute for solid intelligence. Sound German intelligence of the Soviet Union was swept aside or marginalized in favor of intelligence estimates that reflected the German army's poor assessment of Soviet capabilities. Secondly, Megargee notes how German fascination with operational art led it to neglect or marginalize the role of logistics in planning the German campaign. From the fuhrer down to divisional levels, those responsible for planning and executing Operation Barbarossa made their plans

and then instructed logisticians to support them. The disastrous results for the German army of this approach became apparent no later than December 1941. Most importantly, this short book serves to underline the role of ideology and culture in the execution of war. Contemptuous of Slavs as subhumans and committed to the destruction of the Jewish people, the German military waged a brutal war of annihilation that served to rally Stalin's often disgruntled people in a war for survival. Initially greeted as liberators, by the end of 1941 German soldiers and occupation officials had turned potential allies into enemies through their brutal conduct, stoking support for the growing partisan movement. One simply cannot separate Germany's military campaign in the East from its broader ideological agenda and genocidal goals.

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Hegemony and Power: Consensus and Coercion in Contemporary Politics by Mark Haugaard and Howard H. Lentner. Rowman & Littlefield, 2006, 262 pp., \$25.95.

In *Hegemony and Power*, Mark Haugaard and Howard H. Lentner compile nine essays from prominent political science scholars to provide "the first systematic examination of the relationship of hegemony and power." The concept of hegemony in this book is derived mainly from the works of Antonio Gramsci, an early-twentieth-century Marxist who sought to discover the interplay of power and the state in Western democracies for revolutionary exploitation. The book is divided into three sections. The first is devoted to explaining Gramsci's theories of hegemony and subsequent development by other scholars. The second applies Gramsci's theory to the realm of international politics. The third section explores the concept of hegemony from three postmodern, constructivist perspectives.

The book begins with a more-than-satisfactory explanation of Gramsci's theory of hegemony, a social-power relationship where the dominant party maintains its position through a system actively supported by subaltern (non-dominant) actors. The system is perpetuated through the institutional structures of the society which, in turn, socialize subsequent generations and subaltern groups to "buy-into" the system; for example, capitalism continually reinforced through government, schools, churches, sports, civic groups, and so forth. This concept is analyzed further in the second essay, giving detail to the ways in which the hegemonic power continually reinforces its position as well as potential vulnerabilities to a counterhegemonic movement.

Two noteworthy concepts are offered in the initial discussion of the structure of hegemony under Gramsci's theory. First, true hegemonic power is "rooted in meaning and social knowledge, not coercive resources." (p. 62) Second, a counterhegemonic movement, such as Gandhi's passive resistance to destructure British dominance in India, can succeed when it avoids reproducing those structures supporting the hegemony while offering viable alternatives. It would not be a difficult

leap to extend Gramsci's theory as developed in the first two chapters to help understand the current ideological struggle between liberal capitalism and radical Islam.

The section on international politics begins by exploring the pursuit of hegemony by the United States as a policy; that is, "operationalizing hegemony." Following Gramsci, this author posits that US hegemony can not be imposed from the top (coercively) but must flow from below. This bottom-up support is achieved through US cultural dominance. He states, "*The perceived desirability of imitating the American way of life is also the most important justification for voluntary compliance* with American-style norms, the convergence of political and economic institutions and practices, and an emphasis on capturing the benefits of globalization for the purpose of domestic coalition-building." (p. 84, italics in original) This becomes problematic when US domestic interests ultimately diverge from actions necessary to sustain the institutions reinforcing the hegemonic order; for example, the pursuit of regional free-trade agreements while not resolving the impasse of the World Trade Organization's Doha Development Agenda. This "opportunistic behavior" reduces support for, and the true basis of, hegemonic power within the system.

The second essay of this section offers a concise explanation of the major themes in international political theory. Although a good synopsis, the author does little more than suggest that the study of power and hegemony can benefit from each other. The final essay of this section explores the power dynamics of Europe and the United States under hegemony. The concept of power is explored along three lines—termed capacity, relational, and structural power—giving the impact on each for different proposed courses within the trans-Atlantic relationship. The time frame for the analysis is from 11 September 2001 until June 2004 and employs Kagan's famous Mars/Venus analogy as well as Vaclav Havel's 2002 address to the NATO conference on the normative importance of the Atlantic community. The author develops the strengths and weaknesses of both the American and European approaches to the concepts of multilateralism and unilateralism while making an argument for the Iraq invasion as a process of "groupthink."

The final collection of essays focuses on postmodern interpretations to hegemony and power. The first essay in this section breaks down the white, Western feminist movement as a hegemonic system. The specific case in question revolves around an attempt by Finland to criminalize the buying of sexual services. However, the main value comes in the form of a concrete example separating the components of a hegemonic system that is, on the surface, counterintuitive. The next essay is a theoretical piece arguing for the study of hegemony through a critical, naturalist approach. Through a discussion of foreign aid, the author proposes an alternative perspective for viewing the hegemonic system. The final two essays explore the concept of the actual location, or even the existence, of power as an object for radical political thought and antagonism and delve into the method in which political power is formulated.

On the whole, Gramsci's theory of hegemony seems to offer a promising and interesting framework for understanding ideological struggle. However, this book

does not offer an enjoyable avenue for exploring this concept as a general reader. The work is steeped in theory and does not present adequate discussion of any practical application for the ideas presented. The target audience seems to be academics wishing to debate some of the subtle nuances in hegemonic systems, which makes this collection of essays tedious and often boring.

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Beating Goliath: Why Insurgencies Win by Jeffrey Record. Potomac Books, 2007, 180 pp., \$24.95.

Jeffrey Record, of the USAF's Air War College, turns his razor-sharp analytical skills to the question of why insurgencies tend to prevail against usually much larger and stronger opponents. This is a task made more difficult because of the ongoing wars in Iraq and Afghanistan and because of the United States' bitter experience in the Vietnam War. Record understands and resists the temptation to rush to judgment about the struggle in Iraq without first laying a conceptual and historiographical baseline before plunging into his analysis of US policy, strategy, and operations against insurgents in Iraq. This conceptual and historiographical analysis—that begins by acknowledging that most insurgencies fail—makes the book an essential source for anyone wishing to understand the current insurgency in the Middle East.

The first chapter, a 22-page historiographical essay that traces the lineage of counterinsurgency research, is worth the book's purchase price. Record summarizes and analyzes the works of scholars including Andrew Mack, Steven Peter Rosen, Colin Gray, Ivan Arreguin-Toft, Gil Merom, and others to distill a consensus on the factors that contribute to insurgent victories. Not surprisingly, the United States' experience in Vietnam figures prominently in this scholarly tradition. But as Record examines scholarship that may rely on the Vietnam War, he also draws inferences that apply to a wide range of counterinsurgency efforts: the American Revolution, the Spanish guerrilla of the Napoleonic era, the American Civil War, the Chinese Communist Revolution, the French Indochina War, the Algerian War, the Malayan Emergency, the Vietnam War, and the Soviet-Afghan War. While these conflicts merit special treatment as in-depth case studies, the Iraq insurgency stands apart with its own chapter.

Explanations for military defeat are complex—when they involve counterinsurgencies they become more so. Record writes that one begins by understanding the nature of the conflict and the nature of the combatants. Analyses of will, strategy, and type of government, while typically used by scholars to explain defeat and victory, often fall short when explaining reasons for success-

ful insurgency efforts. “Goliath” states usually approach counterinsurgencies by viewing them as limited; therein lies the first divergent vector between successful insurgents and their opponents. When large states view conflicts as unworthy of their investment and when insurgents view conflicts as existential, there may be an upset in the making. Large states can often escalate their materiel investments in efforts to “win” the conflict, but when facing enemies willing to match their opponents’ materiel with indomitable willingness to die for their cause, escalation may not carry the day. The insurgents’ materiel weakness, according to Record, dictates asymmetric strategies, including guerrilla warfare and terrorism. Conversely, states that attempt to defeat insurgents on the battlefield without correcting the social, cultural, and political conditions that formed the breeding ground for the insurgents in the first place only diminish their chances for success.

The feature that can most often determine an insurgent’s potential to defeat its opponent is the presence of external support. Record shows that without France’s moral and material support for the American Revolution, the colonists would never have marshaled the resources to evict the British military presence. The French involvement convinced the British that they faced a greater threat from continental Europe than any potential threat posed by revolutionaries in distant American colonies. Materiel support provided by Russia to Chinese Communists and to the North Vietnamese by the Chinese sustained insurgents in those wars. Also, without the US provision of Stinger missiles to Afghan mujahedeen insurgents, the rebels would never have challenged Russian mobility and air superiority. By extension, Record argues that cutting off support from external sponsors is a vital prerequisite for success in Iraq.

Several cultural and organizational factors work against US efforts in any counterinsurgency effort. In the first place, Americans tend to divorce military operations from their political contexts. In Record’s words, “Americans view war as a suspension of politics; they want to believe that the politics of war will somehow sort themselves out once military victory is achieved.” (p. 137). This leads to a preference for fighting with overwhelming force—and its attendant overwhelming logistical footprint. The effect is one that leads to wars characterized by firepower and high-tech solutions rather than those that rely on patience and attempts to address root causes of conflicts. Another consequence for American policy is that after suffering defeats (as in Vietnam, Lebanon, and Somalia), the military tends to reject attempts by civilian leaders to involve the nation in future counterinsurgency and small-war efforts. Unfortunately, the preference for conventional warfare also results in unwillingness to study counterinsurgencies and to organize, train, and equip for them. Record issues a final caution: “The strong, especially democracies, lose to the weak when the latter brings to the test of war a stronger will and superior strategy reinforced by external assistance.” (p. 130).

There is much to commend in this volume. The analysis is first rate, the examples provide relevant and rich details to illustrate the concepts, and the inferences are sound. The United States’ experience with the American Revolution and the

Vietnam War overshadows some of the other case studies, but this does not detract from the usefulness or the importance of the book. This is a “must read” for policy makers, strategists, military professionals, and scholars seeking to advance their understanding of counterinsurgency warfare.

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Globalization and the Future of the Welfare State edited by Miguel Glatzer and Dietrich Rueschemeyer. University of Pittsburgh Press, 2005, 276 pp., \$29.95.

The global political economy has undergone monumental changes in the recent past: the birth of numerous fragile nation-states, the end of the Cold War, the spread of democracy, and the emergence of an ever-increasing interdependent global economy where rich and poor nations alike must compete. It is the latter—the impact of economic globalization and its effect on the welfare state—that is the focus of this comparative study; the thesis being, “Does globalization undermine the welfare state?”

The book challenges the neo-liberal view that economic openness (globalization) uniformly reduces or eliminates the social welfare power of states. Already, the experience of northwestern Europe is strongly at odds with the view that globalization undermines the welfare state. This region of the world contains the most developed welfare states while exhibiting the highest degree of integration into the world economy. The high level of social spending does not predate economic openness; rather, it developed during the liberal trade regime instituted after World War II. This dramatic expansion of public social provision went hand-in-hand with very high rates of economic growth. On balance, then, the northwestern European welfare state is not only compatible with globalization but has even thrived because of it. (p. 8)

Empowered with this insight and utilizing the top scholars’ research in the field, the book’s co-editors—two accomplished researchers on the topic in their own right—conducted a cross-regional historical comparison of political and economic development in middle-income countries in five regions: Latin America, southern Europe, east-central Europe, the Russian confederation, and East Asia, along with the northwestern Europe experience. They examined a wide range of conditions along three lines of interest—the place of a country in the international economic environment, its social policy history and underlying domestic forces and international patterns, and the impact of economic openness on social welfare arrangements. The selected cases are presented in individual chapters and represent some of the very best research on the subject. They also use the best possible cross-section of middle-income countries (e.g., Russia, South Korea, and Portugal) to reflect the interplay of international openness and domestic conditions in shaping social policy developments of middle-income welfare states. The results of this collective body of work reveal that economic openness is causally related to social

expenditure as well as to productivity and growth-enhancing state intervention in the economy. More specifically:

1. Nations committing themselves to economic globalization through privatization, liberalizing trade, foreign direct investment, and capital flows generally experienced expansion of the welfare state and higher social expenditures—even in societies such as South Korea, where little to no social insurance/support previously existed.
2. Democracy begets economic openness, and economic openness begets democracy.
3. Globalization appears to have very different effects on welfare states, depending on their geopolitical position and the relationship between their domestic politics and global politics. Middle-income countries that aligned themselves with democratic high-income countries (e.g., the Czech Republic's orientation and subsequent integration into the European Union) experienced even greater economic growth and social expenditures.
4. Middle-income countries that both globalized and democratized generally experienced more rapid growth in government spending over the same period, spending that enhanced global competitiveness and provided greater social benefits.
5. Globalization generally requires social expenditures/policy responses that account for:
 - a.) social and economic risks;
 - b.) actual changes in the market position of different economic sectors;
 - c.) job losses, unemployment, job insecurity, and income volatility in the different sectors affected; and
 - d.) affected groups and their organizations and political parties must assess risks, ascertain outcomes, and promote policies that concern unemployment compensation, retraining, and increasing income flow not related to market developments, such as minimum pensions, welfare in the narrow sense, or generous child support. (p. 211)

The results confirm Wagner's law that society's demands for government spending increase with higher levels of per capita income (not necessarily at the expense of the state's global economic competitiveness). Wagner's law identifies the necessity for increasing state expenditures in support of the social activities of the state, administrative and protective actions, and welfare functions.

The research validates the portion of President Bush's 2006 *National Security Strategy* that emphasizes the significant role that democracy and globalization can play in promoting peace and stability, strengthening nation-states, and improving

economic prosperity amongst developing nations. The insight derived from this book has practical utility in helping determine how the national instruments of power (diplomatic, informational, military, and economic) may best be used in shaping the political and economic development of middle- and low-income countries.

In spite of its superb intellectual attributes and valuable contribution in linking rich and poor welfare states, this book has very limited usefulness for the vast majority of general readers. It is best suited for academic scholars, international financial institutions, and persons that develop, coordinate, shape, and/or execute the above prescribed activities. Furthermore, due to its extensive use of technical terminology, academic language, research writing style, and complicated tables, figures, and graphs, the book is difficult to read, understand, and comprehend.

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Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A. Q. Khan Network by Gordon Corera. Oxford University Press, Inc., 2006, 350 pp., \$20.44.

On 4 October 2003 a German ship, *BBC China*, was diverted to Italy en route to its final destination, Tripoli, Libya. In Italy, five large containers of nuclear centrifuge equipment were offloaded. On 18 December 2003, Mu'ammar Gadhafi announced that Libya was ending its WMD program, including its quest for nuclear weapons. As a result of Gadhafi's decision, the nuclear proliferation network of Dr. A. Q. Khan, father of the Pakistani nuclear bomb, was uncovered and halted. Those content with this simplified explanation of events should not waste their time reading this book. Those interested in the truly painstaking intelligence process of taking down the Khan network will find it fascinating.

Certainly, this book cannot claim to tell the complete story, much of which remains classified or not even completely known. However, what it does provide is a fascinating glimpse of the process used by Dr. Khan to get the highly technical equipment required for bomb making, even though Pakistan did not have the industrial base to support many critical portions. He used front companies to hide the end user—Pakistan. If a particular piece of equipment were on a prohibited list, he simply bought the subassemblies and built the unit.

How did Western intelligence detect the Khan network? It was a painstaking and sometimes daring process of collecting information and piecing together the larger pattern. This led to the delicate diplomatic task of confronting Gadhafi. When confronted, he agreed to renounce all WMD programs as well as to supply information on the Khan network. Using Gadhafi's information and other intelligence, negotiators were then able to confront Pakistan's president Pervez Musharraf.

In his article, "Airmen and the Art of Strategy" (*Strategic Studies Quarterly*, Fall 2007), Gen T. Michael Moseley discussed "holistic and multidimensional" thinking. Rolling up the Khan network is a classic case of the West using the

intelligence, diplomatic, and military dimensions to accomplish this. The one weak point of this book is its neglect of the military's influence on Gadhafi's thinking. The closest it comes is to note that in March 2003, Gadhafi's son contacted Britain's MI6 over concern that the Americans might be considering regime change for Libya. The US military had just marched into Baghdad in 21 days, and perhaps Gadhafi calculated that it might take only three days for them to reach Tripoli.

In 1993 Ramzi Yousef drove a truck with 1,500 pounds of explosive into the underground parking structure of New York's World Trade Center. His objective was to kill 250,000 people. Had he delivered a 1,000-pound nuclear device built according to the design Libya had received from the Khan network, he would have succeeded.

If ignorance is bliss, then not reading this book is the best advice. If one is concerned about the threats facing the United States and the West, then reading this book is a must.

William Thayer
Retired engineer

Dictatorship of the Air: Aviation Culture and the Fate of Modern Russia by
Scott W. Palmer. Cambridge University Press, 2006, 328 pp., \$40.00.

Dictatorship of the Air is part of the Cambridge Centennial of Flight series, which "presents new titles dealing with the drama and historical impact of human flight." The importance of aviation to the Soviet Union, and now to the modern Russian Federation, cannot be underestimated. Imperial Russia and the Soviet Union of the early to mid twentieth century sought to improve its standing on the world stage through civil and military aviation. Palmer presents a wonderful history of aviation from the pre-Soviet tsarist era through Josef Stalin's early Soviet Union. He uses the term *air-mindedness* to describe his take on the imperial Russian and Soviet journey through aviation. Air-mindedness, as defined by Palmer, is a "particular set of cultural traditions, symbols, and markers that, combined with existing political culture and social institutions, constitute a given nation's response to the airplane."

Dictatorship of the Air provides a very comprehensive discussion of Russian and early Soviet air-mindedness. The book is divided into three parts. Part I, "Imperial Aviation, 1909–1917," covers the beginnings of aviation in imperial Russia. In two chapters, the author discusses the aviation awakening of Russia and how tsarist rule imparted air-mindedness upon the Russian people. He makes a good argument for how the beginning of Russian infatuation with "bigger equals better" airplanes set the tone for the future of Russian aviation culture. The tie between the civil and military aviation sectors of Russia began during this period and continues to this day. The reader will be drawn to the warrior ethos that was instilled in early Russian aviation culture, to include the civilian populace.

Part II, “The Origins and Institutions of the Soviet Air Fleet, 1917–1929,” consists of four chapters covering the immediate post–October Revolution period. These chapters discuss the origins of Soviet dictatorial aviation thought through the Bolshevik lens. Early leaders of the Soviet Union—Lenin and Trotsky—recognized the value of technology and aviation and sought to actively pursue advances in both. Aviation also provided some continuity for a country torn by revolution and purges, and Palmer describes the “Sovietizing” of the air and its implications for the future of Soviet aviation. He includes a unique section, in keeping with his definition of air-mindedness, about the images and iconography of early Soviet aviation. The chapters covering these topics make interesting reading and show how Josef Stalin kept the nation’s eyes to the sky with a cult-like following of Soviet aviation achievements and progress.

Part III, “Soviet Aviation in the Age of Stalin, 1929–1945,” includes three chapters devoted to the immediate prewar era through World War II. It covers the integration of Stalinist thought into Soviet aviation. The catalyst for Soviet military aviation development was the German attack during Operation Barbarossa. The destruction of the Soviet air force provides the impetus for rebuilding and modernization. Palmer continues to show how the Soviet culture of “bigger and better” transformed the Soviet air arm. He discusses how the inadequacies of Soviet aviation led to development of Soviet “space-mindedness” and the “space race.”

Dictatorship of the Air meets the intent of the Cambridge Centennial of Flight series, and Scott Palmer does a wonderful job of showing an early history of Russian and Soviet air-mindedness. This book provides the reader with a different perspective of Soviet culture and a starting point for study of Soviet and Russian aviation history. It is a highly recommended read for the student of aviation history.

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Regime Change: A U.S. Strategy through the Prism of 9/11 by Robert S. Litwak.
Johns Hopkins University Press, 2007, 424 pp., \$65.00.

This first-class historical narrative belongs to a unique literary genre that can be called “the history of the present.” As post–9/11 events have continued to unfold, phenomena rarely visible in early 2002 now appear routinely in the world press. Litwak has rekindled the glow of the immediate past, skillfully discerning the underlying contour of an age of crisis and confrontation. But *Regime Change* does not idly chase each day’s events, a domain rightly reserved for journalists and commentators. Instead, Litwak has distinguished his work from a mere anecdote. What makes it history is his placement of events in relation to a global process, charting both continuity and change as US policy makers confronted an unfamiliar strategic context.

The author's motivation for the current treatment of this topic was the 11 September 2001 terrorist attack by al-Qaeda and the war in Iraq. Echoing the paradoxical conjunction of US primacy and vulnerability, he shares the belief that the United States, as the single remaining superpower somewhat gifted with the responsibility for global leadership, cannot have a "stand alone" perspective. Instead, effective strategic decisions must flow from a managed process that produces a perspective through consensus that is broader than any single nation might possess.

The Bush administration's policy of unilateralism, preemption, and regime change has been likened to Newton's third law of motion, which states that if a change is introduced into a system—from the outside or inside—that change unsettles its stability, and a counteraction is triggered by the powerful mechanisms of conservation. Specifically, these policies have provoked considerable counteraction from conservative forces, and as Sunni insurgency actions in Iraq now indicate, efforts to impose change by force have provoked a more violent and damaging reaction than the initial disturbances would have suggested.

Professor Litwak is a knowledgeable political historian concerned with mass movements, security, and international relations. As such, he did not construe his subject narrowly; rather, his narrative style shows a flair for devising imaginative or innovative critiques with accurate and effective ways to fulfill the major requirements of analysis. The author works in a somewhat information-rich environment. His references come from an unusually diverse set of sources. The key ideas here are coherence and narrative guiding the organization of his observations into meaningful structure and pattern.

Litwak traced the origin of regime change as an acceptable international relations conceptual framework to two exceptional instances—Vietnam's 1978 intervention in Cambodia to overthrow Pol Pot and Tanzania's 1979 incursion into Uganda to help opposition forces oust dictator Idi Amin. Both cases involved archetypal rogue, outlaw, or pariah states of the pre-1980 period. The international community, according to him, turned a blind eye to violations of the norms of national sovereignty and the violation of state borders; ironically, by contrast, the United States was unable to get international backing for its 2003 military action to override Iraqi sovereignty and overthrow Saddam Hussein and his regime. In spite of the near successes of the current endeavors, it still implies that a very different political game is in the making and is already, to a large extent, practiced.

On preemption, the author linked two instances from the Cold War era associated with preemptive use of force in counterproliferation policy: the US consideration in the early 1960s of a preventive strike on China's nuclear weapon facilities and Israel's June 1981 bombing of Iraq's Osiraq nuclear reactor. But, how has the global community responded to these pioneering approaches? On the negative side, there are a variety of problems inherent in the treatment of regime change and preemptive military strikes. Litwak poses a lot of questions for policy makers that are as good as biblical catechism of old.

Nevertheless, the concept has become a way to overcome the troubling external behaviors of rogue states and to develop international order that promotes responsible behavior, escaping the diplomatic logjam that often characterizes the pursuit of bilateral relationships. Taken together, the new course depicts a new historical drama on a global stage, like a three-act play that may be repeated many times with different sets and casts. Barring any likely constraint, the global community has only three prototypes—preemption, regime change, and behavioral change—from which to choose.

The author examines the circumstances under which nations attribute behavior either to stable disposition of leaders or to historical characteristics of the country. Accordingly, the decision to terminate Libya's WMD programs in December 2003, just eight months after the fall of Baghdad, offered an example of apparent bias in causal attribution. The Bush administration was quick to attribute the Libyan course change as a vindication of its muscular nonproliferation strategy. Disagreeing with this assumption, Litwak sought to demonstrate that when a country's actions are consistent with US desires, the most obvious explanation in the absence of strong evidence to the contrary is that US policy effectively influenced the decision. In analyzing the reason why Libya acted the way it did, the author offered that the basis for Qaddafi's change in proliferation intention was the Bush administration's willingness to eschew regime change in Libya and instead offer a tacit assurance of regime survival.

On the whole, Litwak's analyses were in some instances handicapped by the lack of adequate information. Observations confined to the top of the decision-making hierarchy cannot yield much insight into regimes' trajectories. In Iraq, the most dynamic events are taking place outside the Ba'ath party, in the social sphere, well beyond the view of political scientists. Above all, the US regime change experiment in Iraq has shown that the amount of information available is greater in hindsight than in foresight. The author contends that collective efforts rather than unilateral actions, such as those toward Iraq, are essential for combating al-Qaeda and for effectively addressing the ongoing crises with North Korea and Iran.

Regime Change does not address why US intelligence agencies, particularly the CIA, understood the North Korean and Iraqi political landscape so poorly and as such could not initiate the US onslaught in Iraq when they were called to act. On the other hand, Litwak offers clear insight on the nonstate sponsors of terrorism that hardly demand further explanation. However, the dimension and potential of this nexus of terrorism, especially its political aspect, is still poorly understood. For instance, while the Pakistani government restricts US intelligence officers' access to its self-acclaimed father of its nuclear technology, A. Q. Khan, for political reasons, he has been linked to the transfer of uranium centrifuges to Libya, Iran, and North Korea. But one thing is clear: the global antiterrorism war needs a structure that can match its complexity. In many ways—sometimes overt, sometimes covert—the contemporary intelligence network has evolved a strong system pressuring the “nuke” black market economy.

By surveying the longer stretch of historical policy developments in these key states, professionals who seek profound understanding of the call of our time will find Litwak's *Regime Change* an irresistible compendium of materials to undertake the complicated task of understanding the challenges of the historical era that began in the recent past.

Aliyu Bello

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Making Sense of War: Strategy for the 21st Century by Alan Stephens and Nicola Baker. Cambridge University Press, 2006, 306 pp., \$45.00.

To paraphrase Ecclesiastes, there seems to be no end to the making of books on war and strategy. And at first glance, this work with an incredibly ambitious title would appear to be merely one more for the pile. But, *Making Sense of War* is a remarkably useful, accessible, and comprehensive guide to thinking about war, warfare, and strategy at the dawn of the twenty-first century.

The authors are distinguished lecturers from the University of New South Wales Australian Defence Force Academy. American readers are probably most familiar with Alan Stephens as the former official historian for the Royal Australian Air Force who has written widely and persuasively on aviation, airpower, and Asia-Pacific security issues. His colleague, Nicola Baker, is a strategic studies analyst who is well versed in the problems of today's international security environment.

Stephens and Baker proceed from the proposition that globalization, international terrorism, and the current eclipse of interstate war by intrastate conflict have neither invalidated "long-standing strategic beliefs and practices" nor abrogated the requirement to understand and apply them. They believe that "much of the literature on strategy and war has been too compartmentalized to provide a useful survey of ideas and practice or offer suggestions for the way forward." As a correction, they offer their own "integrated, explanatory and prescriptive analysis" (p. xi).

This work does a marvelous job of synthesizing historical and current thinking about war and strategy and relating this synthesis to twenty-first-century realities. In so doing, Stephens and Baker take a thematic and comprehensive approach to their subject, beginning with an explanation of the nature of strategy and concluding with an assessment of the state of strategy and strategic thinking today. The authors divide the labor—Stephens focusing on operational strategies in chapters 2 through 6, Baker analyzing the links between policy and strategy in chapters 7 through 9, and collaborating on the introductory and concluding chapters.

Stephens provides a thorough overview of the theory and practice of war. From his operational-level perspective, he defines strategy as "the art of winning" and uses the "ways, means, and ends" construct familiar to military professionals as a tool for describing, explaining, and analyzing the strategies—some combination of deterrence, coercion, and compellence—available to the strategist. Much of this is pretty conventional fare, as when he follows the current practice in elevating the

“idea of center of gravity . . . elegantly simple and powerful” as the preeminent “concept in strategic thinking” (p. 64). Stephens, however, is unconventional and even gifted in the clarity and precision he brings to discussing ideas that have become badly worn over time. He displays this gift in his exposition of strategic paralysis in chapter 6. In 21 pages, he weaves center of gravity; John Boyd’s observe-orient-decide-act (OODA) loop; John Warden’s rings; effects-based planning; and network-centric warfare into a clear, coherent, and compelling argument for strategic paralysis as an attainable ideal.

In many respects, Baker’s task is more difficult than her colleague’s: distill the essence of the broad field that is strategic studies and offer it to the reader in a simple but not simplistic presentation. Thus, she begins her discourse on policy and strategy with the truism that “war always has a purpose,” and much of what follows flows from similar propositions. She uses these precepts in a broad overview—which she executes at a breakneck speed—of how strategic goals and objectives, legal and moral constraints on war and warfare, and civil-military relationships shape strategy. Her chapter on “Peacemaking”—a timely subject often given short shrift in print and practice—is the most thoughtful and satisfying piece of her contribution. Here, Baker persuasively argues that “many interventions in civil conflicts, failing states, and humanitarian crises have been characterized by, and consequently suffered from, an absence of strategy” (p. 247).

As a survey, *Making Sense of War* demystifies and captures the essentials of a broad, complex, and important subject. The authors’ purpose gives the work its basic coherence, but their division of labor keeps the book from achieving its full potential. We are left with a clarifying exploration of the application of force and a cogent exposition of the purpose and limits of strategy but only a halfhearted attempt to relate the two. (Some might argue that in this they mirror the practice of strategy itself.) This labor is a task for a second edition, which this book richly deserves. Although neither the publisher nor the authors offer it as such, it would certainly find its niche as a core text for introductory strategic studies courses.

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Correction

The article in the printed edition of the Fall 08 *Strategic Studies Quarterly* by Dan Green entitled “Winning the War against Religious Extremism: Creating a Peaceful Islamic Path to Conflict Resolution,” contained errors. The corrected version entitled “Harnessing the Islamist Revolution: A Strategy to Win the War against Religious Extremism,” appeared in the electronic subscription and online editions. Readers may access the corrected version at <http://www.maxwell.af.mil/au/ssq/2008/Fall/green.pdf>.