Which Way to the Future?

By IAN ROXBOROUGH *and* DANA EYRE

The Armed Forces are at a crossroads. There has been vigorous debate since the Cold War over the nature of future war. This article identifies four major positions in that debate and argues that each represents not only a possible future, but a likely one. The sign at the crossroads points in four directions and the future lies each way. No wonder the controversy seems inconclusive.

Debates on future wars and other military operations are usually set against the inherited (or legacy) image of war. Proponents of various persuasions argue that a particular scenario portends the future. They usually contend with conservatives who they cast as unwilling to change rapidly enough to prepare for their view of the future. The argument is about which future to prepare for.

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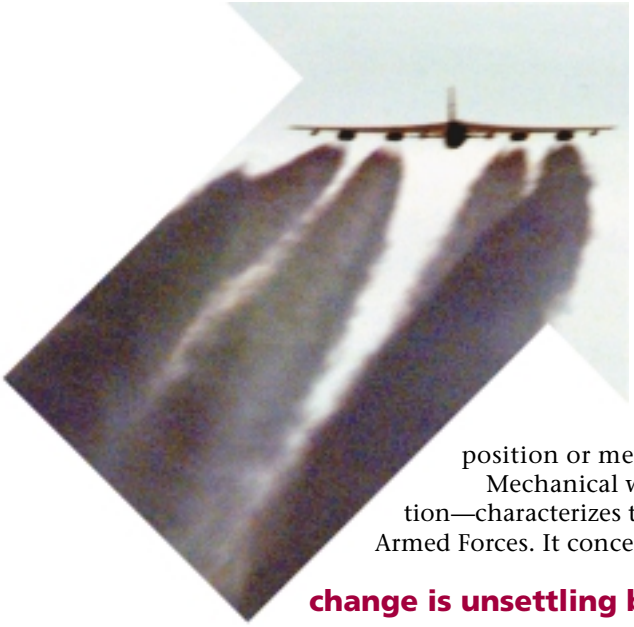
The argument that there is only one likely future leads to premature closure and narrowing of options as force planners and doctrinal scribes sense the pressure to translate hazy guesses into concrete designs. Accordingly, this article argues that one should recognize that multiple futures are possible and likely to occur simultaneously. Moreover, the future will not be one-dimensional but rather multidimensional. How should we prepare for these multiple futures?



The four positions on the future currently being debated in defense circles can be identified as systemic war, cyberwar, peacewar, and dirty war. These labels are exaggerated, but they reflect the nature of the debate. To them must be added the legacy position or mechanical war.

Mechanical war—the legacy position—characterizes the recent past of the Armed Forces. It conceives of war as a clash of massed armor and tactical air, with deep strikes to weaken enemy will, along the lines of Operation Desert Storm. It is an image with roots in World War II, one that has done a great deal to determine the self-image and identity of much of the U.S. military today. It is a conservative notion in the literal sense, though that does not necessarily make it wrong.

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Post-Cold War force planning exercises reinforce this image. Adopting canonical scenarios of conflict for the Persian Gulf and the Korean peninsula are comfortable because they resonate well with traditions of both the Cold War and Desert Storm. Many are content with the legacy image because it is deeply rooted in history. In addition, there are powerful organizational pressures to stick with a concept that replicates a familiar force structure. Change is unsettling, not least because it could alter the relative importance of the services and various warfighting communities.

Four Images

While no graphic representation can do full justice to varied and complex visions of warfare, the following figure displays the four principal images and suggests why the debate is so contentious and difficult to resolve.

Figure 1. Pathways to the Future

Systemic War. This image anticipates a future in which war will be fought with missiles, precision-guided munitions, and space-based assets. There are differences among the proponents over which weapons and platforms will predominate, with some advocating small and distributed systems and the more conservative stressing a continuing need for large systems. Some emphasize the role of information networks to connect sensors, shooters, and decisionmakers. All agree that a quantum leap in microchip technology will mean ever-smarter bombs and bullets. The notions of a system of systems, network-centric warfare, parallel warfare, and a digitized battlefield epitomize versions of the systemic warfare image. This view of war is incorporated in *Joint Vision 2010*.

Cyberwar. An equally technologically-oriented image is cyberwar, a soft power image in which conflict is waged by combatants at computer terminals. These (often civilian) infowarriors hack into enemy computer systems to disrupt financial flows, communications, and public utilities. In its purest form, this image of future war does not see the enemy being attacked with bullets and bombs. Rather, manipulation of information suffices to inflict sufficient damage to bring about the desired endstate. In a less extreme version, cyberwar is perceived as part of larger operations that combine other warfighting techniques. Computer attack and defense support the wider struggle for information superiority.

Both images stress technology and are compatible with the notion of a revolution in military affairs. There are cogent reasons, however, for considering cyberwar as sufficiently distinct from systemic war to warrant treating it separately. The difference between systemic war and cyberwar is largely the type of weaponry employed. Systemic war is about getting bombs on target and uses advanced technology to gather intelligence, command and control forces, and strike with precision. The objective is to kill, destroy, disorganize, or disable through physical means. Cyberwar, on the other hand, attacks through interference with electronic communication systems. Someone sitting at a computer terminal hacks into enemy banking systems or power grids, thereby creating chaos. Both systemic war and cyberwar are high tech. But the former uses bombs and bullets (or their future equivalents) and the latter does not. Moreover, cyberwar is not simply a subcomponent of systemic war, according to its proponents; it can be a distinct way of waging conflict.

Peacewar. The other images—not ignoring technology—stress the importance of soldiers. The more obvious is peacewar which captures the ambiguities and shifting boundary between war and military operations other than war. Terminological changes, and the examination by the Army in FM 100–5, *Operations*, of whether all military efforts can be conceptualized as operations, point to the problem of precisely distinguishing between peace and war. The prevailing image has soldiers, more or less equipped as today, engaging in a range of low-intensity constabulary duties. Technological advances are marginal. The extent to which space-based intelligence, surveillance, and reconnaissance (ISR), airpower, and microchips assist troops engaged in peacewar operations is debatable, but the basic image is boots-on-the-ground. It is a manpower-intensive concept.

Dirty War. The remaining image lies on the hard-power end of the spectrum and is closer to the systemic war image of high-technology warfare. It is the dirty war image. Numerous thinkers from Samuel Huntington to Ralph Peters have argued that future conflicts will pit the United States against a motley collection of nonstate actors. Such conflicts are likely to be between civilizations, or between civilizations and barbarians. This image is based on a generally pessimistic observation about the forces of primordialism in the world today. These themes combine to present a pessimistic view of human nature as prone to irrational hatred and violence, extrapolating present ethnic and religious conflict into a future in which failed states abound and non-state actors become central. According to this image, fire must be met with fire. High-tech forces of the systemic warfare school are likely to be inappropriate and may be faced by a variety of asymmetric responses. Thus the United States would be advised to enhance its elite forces. Small highly-trained, self-reliant units would wreak havoc on an enemy. A variant is international terrorism by both state and nonstate actors, possibly with the use of weapons of mass destruction.

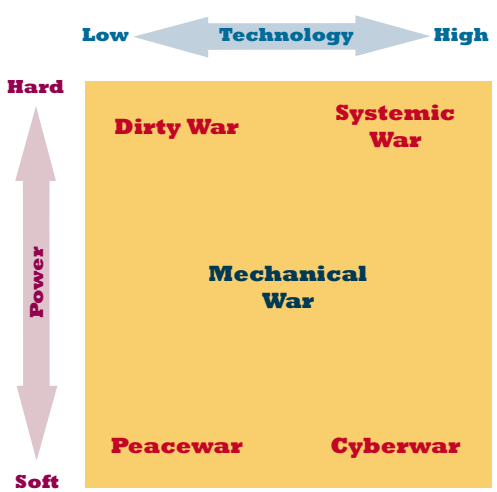
Dimensions of the Future

The four images of future war can be plotted along two dimensions: high/low technology and hard/soft power. Behind the crossroads sign lies a two-dimensional space which is useful for mapping positions on future war (see figure 2).

There are, of course, many intermediate and mix-and-match positions as well as others that simply cannot be found on a conceptual map which characterizes highly sophisticated and carefully qualified arguments. Nevertheless, these images are useful because that is how many people think about future war and because they enable us to describe the contours of the current debate.

In addition to strong pressures to maintain the existing way of war, proponents of change are pulling the Armed Forces in opposite directions. It is common, particularly by hindsight, to see change as unilinear. Looking back at technological and organizational change one assumes that things had to go in a particular way. It is by no means certain that this is the case. Certainly many involved in the process usually discern numerous distinct pathways to the future. This is definitely the situation today. Nor can it be assumed that only one course is true. The future will evolve in all directions simultaneously. Thus

Figure 2. Dimensions of the Future



Kosovar refugees arriving at McGuire Air Force Base.

305th Communications Squadron (John Sidoriak)

each advocate of change is partially correct. The challenge will be designing future forces that can integrate elements of these four futures as well as develop the best transformation strategy for legacy forces.

Force Structure

The goal should not be to create a military after next, but rather four militaries after next, corresponding to four visible futures. These organizations will be quite different from the current structure of the Armed Forces. Attempts at optimization in a situation of multiple futures will push an organization in different directions. This is likely to be harmful. Either the organization will be ineffective or one image of the future will dominate and exclude the others. The question for the United States must be how to design forces that are optimized for flexibility rather than for specific scenarios. It is time for a fresh look at the entire military establishment.

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One possibility must be ruled out at the outset. The United States cannot optimize forces and doctrine as it would under a single scenario. Optimization is the solution only if the problem is known. When it is poorly defined the ability to respond flexibly is more important. If one accepts that more than one future is likely, then the design issue is recognizing trade-offs and maintaining the ability to balance and shift between requirements. Why not simply make the current structure more flexible? After all that is what prescient leaders and analysts are advocating. But any such effort, although serious, will be limited. Flexibility is best achieved by changing organizational structure. Organizations tend to be good at one thing and one thing only. Facing four simultaneous futures, the Nation will probably need four organizations or organizational clusters. This means a radical transformation of the four services, far beyond current concepts of jointness. New organizations should increase the ability to hedge against emerging threats and respond to unfolding situations. The solution is breaking down traditional patterns of resource allocation, promotion, and thinking about war, no easy task. Organizational shake-up is the obvious way to start.

Given the opportunity to redesign the military establishment from scratch, it is not clear that one would create an Army, Navy, Marine Corps, and Air Force. One should not assume that the existing services or unified commands are the best way to organize to fight. It might be sensible to form a dedicated organization for each future scenario. Thus one would create a highly capable precision strike force for systemic warfare, a cybercorps for cyberwarfare, a constabulary force for peacewarfare, and an uncoventional/special operations force for dirty warfare.

A powerful strike force will be required to deter potential enemies and put muscle behind forces involved in either peacewar or dirty war. This strike force should be truly joint. It should operate as a separate permanent command, ready for use in any theater of operations on the globe. This force will embody the systemic war notion and be capable of rapid global power projection, close to the intention of *JV 2010*. Most of its budget should be earmarked for experimentation and innovation. This force will be the most expensive component of the Armed Forces.

The cyberwar corps will be small, relatively inexpensive, and staffed by a mix of military personnel and civilians who will be indistinguishable from one another. The prized qualities of its personnel will be intellect and imagination. Together with computer engineers, the cyberwar corps will consist of anthropologists, political scientists, and psychologists. Many will operate from think tanks rather than traditional organizations and serve on an ad hoc basis for specific operations.

Large constabulary forces will be needed for peacewars. Unlike forces presently deployed to Bosnia, Kosovo, and elsewhere, they will be an amalgam of light infantry, civilian police, relief

F–117 leading formation, Southern Watch.

1st Combat Camera Squadron (Greg L. Davis)

Fleet Imaging Command, Pacific (Chris Desmond)

Fleet Battle Experiment Echo.

workers, and especially civil affairs and political military specialists. They will likely draw on the dirty-war personnel from time to time and need to borrow some muscle from the strike force. The constabulary force will probably resemble the Coast Guard in organization in that it will only come under the control of the Department of Defense when deployed.

The United States will require elite light infantry forces to fight dirty wars. They must be larger than current Special Forces and probably will be employed on long-term missions as well as for crises. Ranger units may be attached to dirty war brigades with access to high-tech C^4ISR and logistics capabilities and call on precision strike capabilities from other elements. Dirty war forces will combine Special Operations Forces, some functions currently covered by the Marine Corps, and beefed up intelligence forces. They will have strong ties with civilian law enforcement agencies and intelligence organizations and be linked to civilian crisis response forces. It will have bonds with a vast array of both governmental and nongovernmental organizations.

The need for armored formations—a legacy notion that should be discarded—will be slight in the new force structure. To hedge against the need for them, current armor should be assigned to the Reserve components, with only a single armored division and a mechanized infantry division in the active component. These two divisions might be merged with the bulk of the Marine Corps, with the remaining balance of that service going to the dirty war brigades.

The Cultural Challenge

The obvious objection to the kind of force structure outlined above is that only the strike force will be real warfighters. Their only competitors in the macho world will be unconventional warriors of the dirty wars. This is a serious problem. The historical legacy and present culture of the military will make the strike force the most prestigious component of this new structure. This,

Defense Intelligence Agency (Joseph M. Juarez)

Monitoring trouble at National Joint Intelligence Center.

after all, is what war is about, at least for those who think the future will be an extrapolation of the recent past. Dealing with this cultural lag will be a major challenge for the Armed Forces.

On the other hand, the current structure cannot fulfill the images of future war. Indeed, the present debate over roles and missions involves uncomfortable mismatching between the services and images of the future. For example, there are pressures on the Army to move more into peace operations, nationbuilding, and humanitarian assistance—the peacewar image of the future. But if the Army becomes the peacewar force, it must forge a new identity and define the organizational interests which fit these kinds of operations. Historically, the identity of the Army has been tied to warfighting. Combat, particularly by large armored units, has defined the Army, not the sort of constabulary role associated with peace operations (which, coincidentally, characterizes much of its history). The concern over reconciling peace operations and warfighting crops up in myriad ways, from operational tempo, to force protection, to arguments that the best peacekeeping force is heavy armor. There is a budget imperative to embrace peacewar, and the Army has sought to do so with the least disruption to its legacy position, mechanical war. The focus has been to assimilate peace operations within force requirements for conventional warfare. For peace operations, it is argued, are just like other operations. They can be given precise objectives, the notion of decisive victory can be employed, and heavy mechanized forces can be adapted to the task. Yet despite this rhetoric there remains a serious tension between the two images and that tension will continue.

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Like the Army, the Marine Corps must cope with a range of possible futures. Its response has been the imaginative notion of the three-block-war, a very sensible attempt to grasp the variety of future operations with a single image. Nevertheless, the Marines still straddle diverse roles and missions and must deal with several futures, each leading in a different direction. While the Corps has an inclination for mechanical war, it is also headed toward peacewar and dirty war.

On the other hand, the Navy and Air Force are moving heavily in the direction of high tech. Both have embraced systemic war. At the same time, they are endeavoring to show how high-tech methods of stand-off precision strike are appropriate to the complexities of peacewar and dirty war. In terms of the "Dimensions of the Future" shown in figure 2 (page 30), the Navy and Air Force are being pulled to the top right, the Army is being pulled to the lower left. The Marine Corps is being pulled to positions on the left, dirty war and peacewar. If these trends continue, the gaps between the services will widen.

There seems to be a largely unconscious drift in doctrine and force structure as the services seek missions that will preserve their institutional integrity, while staying in tune with the dominant doctrinal future—systemic war. Competition of this sort might be healthy, but it also runs the risk of leading to a force structure driven by efforts to preserve service autonomy.

Planners should ensure that forces are tailored for each future, and not cobbled together in ad hoc packages. Forces developed for one future should not be the element of choice for other futures. No single force structure or weapon is universally applicable. Shifting resources between organizations will enable the Nation to respond to changing circumstances. Managing resources, however, will be a real challenge.

Command and Control

The implications of these images of future war for command and control are distinct and controversial. Command and control issues for systemic war have been extensively deliberated. With individual units able to obtain a full view of the battlespace, how should the decisionmaking hierarchy function? Should decisions devolve down or should top leaders make all the decisions? Networking computers enable everyone to

see the entire battlefield: but the ramifications of this for command and control are unclear. With complete information, a case can be made that top leaders should make all key decisions, leaving subordinates little discretion. On the other hand, if lower-level commanders see the big picture, they can act rapidly to achieve operational goals, providing they understand them. The choice between these two styles of command and control is unclear.

Command and control arrangements for peacewar are equally problematic. For example, some observers have noted that in peacewar operations a junior officer or noncommissioned officer on the ground may have to make a decision with diplomatic consequences. This is inappropriate. If soldiers on patrol or marines at a checkpoint have to take actions that have serious political ramifications, why not have a colonel who is a political military specialist along? Perhaps senior officers with such expertise should command small units in these situations. Of course this change would radically alter existing military hierarchies. But organizations must change to meet new roles.

At the same time, the complexity of decisionmaking in a joint civilian-military environment is increasing enormously. Moreover, many peacewar operations are multinational with diverse political agendas at play. Military commanders are likely to be subordinate to civilians. The way decisions are made and who makes them may not follow classic military (mechanical war) models. There will be a need to move from deliberate planning to ad hoc improvisation, and from command to negotiation and coordination.

Peacewar, dirty war, and cyberwar also offer unique challenges to command and control. For most of U.S. history the military has conducted operations using a rather arbitrary distinction between political/strategic and operational decisions. Under this procedure, commanders in the field make operational decisions without undue interference from civilian leaders. The distinction is arbitrary; it has worked more or less well in conventional military operations in part because of distance and time lag. In future military operations, particularly dirty war and cyberwar, it will be increasingly difficult to neatly separate purely operational decisions and politico-strategic decisions. Either field commanders will need additional political education or command and control systems will have to be radically repackaged.

In dirty war, elite forces will frequently operate in small groups. Will they be connected to their superiors through improved communications or exercise considerable autonomy? Here, as in peacewar, problems of civil-military relations are likely to emerge. How will military units relate to law enforcement and intelligence agencies? What will be the role of military units in operations within U.S. borders?

If command and control issues present novel problems for future war, cyberwar problems are more complex. It may be unclear whether an attack is actually occurring and who is behind it. Civilians may not be bystanders—as in mechanical war—but active players in the cyberbattlefield. Cyberwar needs few traditional military skills. Nearly all required skills are available in the civilian labor force. Suppose such civilians are preferred over military operators? Has anyone figured out how to exercise command and control over civilian infowarriors sitting at computer terminals?

There is considerable uncertainty about the future of command and control systems, which are likely to evolve in ways that differ from traditional modalities associated with mechanical war. Just as warfare will move in four profoundly different directions, so will command and control.

Much of the debate over future war has been misguided. Many assume that their particular image will come to pass and that proponents of other positions are wrong. Getting the future right matters since decisions on force structure, doctrine, and weapons acquisition follow. One should bear in mind Michael Howard's warning that doctrine developers are almost certain to get it wrong and that we must have the organizational flexibility to get it right when the proverbial balloon goes up. The search for the right answer will only be feasible if the problems are clearly identified and the organizational tasks are specified. This is unlikely in the near future.

There are constant reminders that we must prepare for an uncertain world. The best way is to recognize that there is merit to every position in the debate over the future of military operations. We are at a crossroads. The sign is pointing in four quite different directions. The Armed Forces face multiple futures and must prepare for all of them. But they cannot efficiently do so under their current structure. It is time to rethink the entire organizational basis of the military establishment. Once the debate on roles and missions has been resolved by creating a new organization for each major mission, the thorny issue of joint requirements can really be addressed. **JFQ**