

Global Threats and Challenges: The Decades Ahead

Statement for the Record

**Lieutenant General Patrick M. Hughes, USA
Director, Defense Intelligence Agency**

“Causing fear, both to prevent and to win wars, is the purpose of our Defense Department. Weapons, organization, thoughtful strategy, and effective tactics will help us; but the courage of the American citizen makes the rest possible ... But I do keep meeting fine and intelligent people who believe modern weapons have abrogated the need for courage.” Arthur T. Hadley

Mr. Chairman, I am pleased to once again have the opportunity to provide the Committee my views on the global threats and challenges confronting our nation over the next two decades. As we have witnessed during the past year – with the continuing proliferation of weapons of mass destruction highlighted by the nuclear detonations in India and Pakistan ... heightened tensions along the line of control in Kashmir ... disorder in Indonesia ... terrorist bombings of our embassies in Kenya and Tanzania ... North Korean and Iranian progress in developing longer-range missiles ... intense ethnic conflict, particularly in the Balkans and Central Africa ... internal uncertainty and economic crisis in Russia ... the devastating impact of Hurricane Mitch in Central America ... narcotics trafficking and its corrosive effects on governance in Colombia and surrounding countries ... Iraq’s continued belligerence ... and growing concern with the direction North Korea is taking – the international security environment remains volatile, complex, and difficult.

I expect this general global turmoil to continue (and perhaps worsen) at least through the next decade, because the underlying causes – political, economic, social, and technological – remain largely in place. We should therefore anticipate an environment in which threats, challenges, and opportunities coexist, intertwine, and evolve seemingly at random. I am particularly concerned that the simultaneous occurrence of many ‘lesser’ crises will result in a ‘net effect’ that could diffuse our focus, dissipate our power and resources, cause us to be reactive, and ultimately, undermine our ability to shape the future.

Against this backdrop of change, turmoil, and uncertainty, I see five central themes that will define the nature of the military threats and challenges we are likely to encounter over the next two decades. These themes expand upon points I have raised in prior testimony as the Director, Defense Intelligence Agency, and reflect more than ten years of my thinking about the future global security environment.

- **No global military challenger** on the scale of the former Soviet Union is likely to emerge, but the US will continue to be confronted with a host of ‘lesser’ dangers – regional, transnational, and asymmetric. ***Terrorism will continue to be an important threat, particularly when terrorist acts include the use of weapons of mass destruction.*** Collectively, these lesser dangers represent a formidable barrier to the emergence of a stable, secure, and prosperous international order and will continue to absorb a great deal of the US military’s time, energy, and resources.
- **The strategic nuclear threat to the US will endure,** but its character has and will continue to change significantly. While the number of Russian strategic warheads will shrink dramatically, Moscow will retain a potent delivery capability and rely increasingly on strategic forces. China will modernize and expand its relatively small and dated strategic deterrent force. Though less certain, I am increasingly concerned that adversaries – notably North Korea and Iran – will develop and field nuclear-armed missiles with intercontinental range. This more diverse and complex strategic nuclear threat environment affects Cold War thinking about nuclear deterrence, policy, force posture, and strategic targeting.
- **The threat posed by regional weapons of mass destruction (WMD) -- already the greatest threat to deployed US forces -- will increase.** Several rogue states will likely join the nuclear club, chemical and biological weapons will be widely proliferated, and the numbers of longer-range theater ballistic and cruise missiles will increase significantly, particularly in the Middle East. This dynamic has the potential to fundamentally alter theater force balances, the nature of regional war and conflict, and US contingency planning and execution.
- **Large regional forces remain a substantial concern.** A number of key regional powers – China and possibly Russia at the high end, but also an unimpeded Iraq, Iran, India, Pakistan, and, at least through the near term, North Korea – will field conventional military forces that are large and well-equipped by today’s standards. The degree to which these ‘industrial age’ forces can adopt and apply selected ‘high-end capabilities’ – WMD, missiles, satellite reconnaissance, global positioning, precision-strike, advanced radar, and so forth – remains to be seen. In the right regional context, they could pose a significant threat to US mission success, particularly in the period beyond 2010.

- ***The emergence of a new threat paradigm, and changes in the nature of warfare itself***, underpin all of the trends outlined above and are having a profound impact on US military missions, strategy, organizations, planning, operations, and force development. It is difficult to predict precisely how these trends will play out over the next two decades. That uncertainty creates an extremely challenging planning environment for US policy makers and force planners.

Assumptions and analytic framework. This specific assessment of the future security environment is colored by some key thoughts:

- That the United States remains both willing and able to continue its active engagement in world affairs. If that view proves wrong, then this overview would change significantly (almost certainly for the worse).
- That the future does not unfold in a ‘linear’ fashion according to current trends and conditions. The actual path to the future will be fundamentally ‘non-linear’ and this ‘best estimate’ will likely be at least partially wrong. We deal with the non-linear dynamic by undertaking numerous alternative futures assessments – ‘branches and sequels’ analysis. However, in order to present this assessment to you, a linear framework is used to better organize and discuss various topics. In thinking about the future, I urge you to take this concept into account.
- My testimony maintains a strategic-level focus on the long term, and therefore does not specifically address current ‘hotspots’ – unless those current conditions represent a continuing trend or appear to have some significant (lasting) impact on the emerging global security environment.

The Global Threat Environment

“It is simple enough to tell fortunes if a man dedicates himself to the idea that the future will inevitably be worse than the past and that time is a path leading nowhere but a place of deep and persistent threat.” Charles Frazier

No Peer ...

The United States will likely remain the dominant global power – politically, economically, and militarily – during the next two decades. The US economy continues to account for about a fifth of global output, we spend some five times more on defense than any other nation, we retain strong alliances with key nations, we lead or are at parity with world leaders in the great majority of important technologies (both civilian and military), and we spend each year nearly half of what the advanced industrial world spends on all types of research and development. Moreover, our ‘soft power’ – the global appeal of American ideas, institutions, leadership and culture – is unrivaled. Assuming we retain the capability and will to remain engaged worldwide, no other state –

or any likely coalition or group of states – has the wherewithal to usurp the US position within the next 15-20 years. The most significant potential competitors – including Russia and China – all have fewer advantages and more problems. This is especially true in the military arena.

... But Many Challenges

Despite our relative dominance, the world remains a dangerous place. Many challenging conditions exist today and others will emerge over time. Most derive from the volatile mix of factors that have prevented global stability since the end of the Cold War. *While these ‘threats and challenges’ are less significant individually than the global military problem posed by the former Soviet Union, collectively they present a formidable barrier to the emergence of a stable, secure, and prosperous international order.* Moreover, the general decline in US and Allied defense resources since the Cold War, combined with our more robust global engagement posture, make it increasingly difficult to deal effectively with these diverse global conditions.

People in need ... and other local-regional ‘crises.’ A number of factors – population growth and uneven economic and demographic development, inadequate infrastructure and health facilities, rapid urbanization, the increasing frequency and intensity of ethnic, religious and cultural strife, resource shortages, natural disasters, and inadequate local, regional, and global response capabilities – have combined to increase the numbers of people requiring international humanitarian assistance each year. According to UN assessments, some 35-40 million people worldwide have needed aid each year during the 1990s, compared to slightly more than 20 million in 1985. Likewise, the number, size, cost, and duration of UN and other ‘peace operations’ have risen significantly since the late 1980s.

The global dynamic will continue to spur numerous regional and local crises. Prolonged tensions in the Middle East, the Balkans, and the Aegean, tribal and internecine disputes throughout many parts of Africa, continued hostility between India and Pakistan, ongoing border disputes between several nations, and ethnic and political conflict in resource-rich Central Asia – all have the potential to erupt abruptly into active conflict.

These trends, combined with declining military budgets worldwide, have had (and will continue to have) important consequences.

- First, *there has been a dramatic increase in the operations tempo of US and allied forces.* Only a few advanced militaries possess the strategic mobility to project power to remote, undeveloped regions, and even fewer militaries have the communications, transportation, logistics, and intelligence support to stay in distant deployed sites for extended periods of time (particularly under threatening and sometimes lethal conditions). These frequent deployments sap resources and limit training time.

- Likewise, *our increased daily global engagement posture limits the forces and resources available to respond immediately to other, more demanding, regional warfare contingencies.* Anticipating a threat environment in which more than one situation (perhaps several) will require a direct military response simultaneously, is critical to contingency and operational planning. Numerous, simultaneous, smaller-scale crises could have a large-war impact.
- Finally, *these ‘lesser crises’ can divert attention away from other, more significant, systemic global problems.* Given the general global condition, I expect the demand for humanitarian and other ‘peace operations’ to remain high. The effect of this is that US and allied forces may, of necessity, have to react to a continuing sequence of ‘emergencies’ rather than devoting their capabilities toward the shaping of a more stable global order.

Rogues, Renegades, and Outlaws. A number of individuals, subnational groups, and states – Usama Bin Ladin and others with similar views, various international criminal and terrorist persons and organizations, and the governments and leaders of Iraq, Iran, North Korea, Libya, and others – do not share our view of the future. They typically resent the dominant global role played by the US, and feel threatened by the rapid expansion of ‘western’ (and particularly American) values, ideals, culture, and institutions. These entities generally recognize US military superiority and seek to advance their ends while avoiding direct engagement with the US military ‘on our terms.’ They will undertake any number of asymmetric and asynchronous efforts to avoid, slow, halt, prevent, or undo US initiatives and will continue to sponsor many kinds of anti-US activities. They frequently engage in behavior outside accepted international norms – despotism, violent extremism, terror, and unacceptable use of military force – as they struggle to improve their position while undermining the established or emerging order. While these entities are not at present linked by a widely shared unifying ideology, one could conceivably arise under the rhetoric of providing a counterpoint to US power.

Terrorism, Drug Trafficking, and Other Transnational Crime. International criminal activity of all kinds will continue to plague US interests. I am very concerned about the growing sophistication of criminal groups and individuals and their increasing potential to exploit advances in global communications, transportation, finance, and other self-serving circumstances. The potential for such groups to usurp power, to generate negative economic conditions, and to undermine social support systems is on the rise.

- ***The terrorist threat to the US will likely grow*** as disgruntled groups and individuals focus on America as the most prominent symbol of ‘what’s wrong in the world.’ The characteristics of the most effective terrorist organizations – highly compartmented operations planning, good cover and security, extreme suspicion of outsiders, and ruthlessness – make them very hard intelligence targets. Middle East-based terrorist groups will remain the most important threat. While state-sponsorship of terrorism may decline, Iran and some other nations, and private individuals, will continue to support wide-ranging terrorist and subversive activities. The potential for terrorists to use WMD

will increase over time, with chemical, biological, and radiological agents the most likely choice.

- ***International drug cultivation, production, transport, and use will remain a major problem.*** The connection between drug cartels, corruption, and outright insurgency will increase as drug money provides an important funding source for all types of criminal and anti-government activity. Emerging democracies and economically strapped states will be particularly susceptible. The drug trade will continue to produce tensions between and among drug producing, transport, and user nations.
- I am also increasingly concerned about ***other forms of international criminal activity***, for instance ‘cyber-criminals’ who attempt to exploit the electronic underpinnings of the global financial, commercial, and capital market systems, and nationally-based ‘mafia’ groups who seek to undermine legitimate governments in states like Russia and Nigeria. Globally, criminal cartels are becoming more sophisticated at exploiting technology, developing or taking control of legitimate commercial activities, and seeking to directly influence – through infiltration, manipulation, and bribery – local, state, and national governments, legitimate transnational organizations, and businesses. Increased cooperation between independent criminal elements, including terrorist organizations, is likely. Greater interaction between the US military and other federal agencies will be required to counter this growing threat.

Technology development and proliferation. I am very concerned about weapons of mass destruction and missile proliferation and will address these issues separately. However, there are other critical ‘enabling’ technologies – including numerous ‘new sciences’ – that can dramatically affect the nature and capabilities of future threats. Some examples include:

- ***Nanotechnology*** ... packaging advanced capabilities and functions in very small and lightweight form using micro and sub-micro manufacturing and machining technology (in particular, building weapons systems that are smaller, faster, lighter, yet more destructive).
- ***Biotechnologies*** ... particularly the bioengineering of organisms created for very specific purposes (e.g. biological agents that will infect and incapacitate a specific group of people).
- ***Information-related technologies*** ... including advanced encryption, high volume data handling, complex computational capability, and offensive and defensive information warfare capabilities.

Critical Uncertainties. There are numerous issues – to include the great transitions underway in Russia and China, the future of the Korean peninsula, the prospects for lasting peace in the Middle East, the Balkans, and sub-Sahara Africa, evolving global and regional security structures and institutions, and an array of upcoming leadership changes – whose outcome will dramatically impact the global security situation. Uncertainty about these and other key issues brings great stress to the international order. I can

foresee no condition, power, or circumstance that is likely to emerge during the next 10-20 years that will transcend these factors and lead to a more stable and predictable global order.

Enduring Strategic Nuclear Threats

“Nothing changes so quickly as yesterday’s vision of the future.”Richard Corliss

Since the end of the Cold War, Russia has relied increasingly on strategic nuclear forces to offset its declining conventional force capabilities. Despite years of economic crisis and decline, and extreme reductions in the Russian defense budget, Moscow has mustered the political will and resources to field and maintain its strategic force. Indicative of this determination, Russia continues to prioritize strategic force elements – in terms of manpower, training, and other resources – and to invest in the future by funding at least one new strategic missile, and numerous strategic command, control, and communications facilities and capabilities. While these forces and programs have not been immune from the wholesale reduction in Russian military capability, and Russia’s arsenal of strategic warheads will continue to shrink, ***I can foresee virtually no circumstance, short of state failure, in which Russia will not maintain a strong strategic nuclear capability.*** Moreover, Moscow’s increased dependence on strategic forces as the ‘backbone’ of Russian military power is changing the way it thinks about deterrence and war.

China’s strategic nuclear force is small and dated, and because of this, Beijing’s top military priority is to strengthen and modernize its strategic nuclear deterrent. Numerous new missile systems are under development, along with upgrade programs for existing missiles, and for associated command, control, communications and other related strategic force capabilities. While the pace and extent of China’s strategic modernization clearly indicates deterrent rather than ‘first strike’ intentions, ***the number of Chinese strategic missiles capable of hitting the United States will increase significantly during the next two decades.***

Russia and China are the only potential threat states capable today of targeting the United States with ballistic missiles. ***However, I am increasingly concerned that less dependable hostile nations – particularly North Korea and Iran – will develop that capability over the next several years.*** The growing availability of missile technology, components, and expertise, intense political pressure to acquire longer-range ballistic missiles, the willingness of some states to take shortcuts and accept more risk in their missile development programs, and our sometimes limited ability to reliably track these protected programs, are all cause for concern. Moreover, I must assume that any state capable of developing or acquiring missiles with intercontinental range will likely be able to arm those missiles with weapons of mass destruction.

Whether this broader threat emerges sooner or later, during the next two decades, the strategic nuclear environment will become more diverse and complex. This has

significant implications for US strategic force planning, doctrine, deterrence, and targeting. Cold war concepts – such as counter force and counter value targeting, first and second strike capabilities, and mutual assured destruction – may no longer apply.

Regional WMD Threats on the Rise

“War is the great auditor of institutions.” Corelli Barnett

The regional proliferation of weapons of mass destruction and theater missile delivery means (ranges 3,000 kilometers or less) has become the greatest direct threat to US forces deployed and engaged worldwide. Many states see WMD as their best chance to preclude US force options and offset our conventional military superiority. Others are motivated more by regional threat perceptions. In either case, the pressure to acquire WMD and missiles is high and the prospects for limiting them are slim.

Despite our best efforts at controlling nuclear proliferation, and despite the relative expense and difficulty associated with nuclear weapons development, *several rogue states are likely to obtain nuclear weapons over the next 10-20 years. Existing nuclear states will increase their inventories.* As these trends unfold, the prospects for limited nuclear weapons use in a regional conflict go up. So too does the potential for a terrorist or some other subnational group to detonate a weapon. There is also an increasing threat from terrorist use of radiological weapons – ‘dirty’ nuclear devices that contaminate the target with radiation rather than physically destroying it with blast and heat. Use of such weapons – in conjunction with more conventional explosives – will complicate and delay rescue, cleanup, and post-attack investigative operations, cause panic, and increase the overall psychological effectiveness of a given attack.

The threat posed by ‘peaceful nuclear technology’ – due to unsafe or faulty technical designs, aging facilities, inadequate safeguards and security, improper handling, etc. – will increase as older, Soviet-built reactors deteriorate, and nuclear technology use increases over the coming decades. This condition has general security and safety overtones that may directly involve US forces and capabilities.

Chemical and biological weapons are generally easier to develop, hide, and deploy than nuclear weapons and will be readily available to those with the will and resources to attain them. I expect these weapons to be widely proliferated and believe there is *a high probability that they will be used in a regional conflict over the next two decades.* I am also concerned that sub-national groups or individuals will use chemical or biological agents in a terrorist or insurgent operation. Such an event could occur in the United States as well as against our forces and facilities overseas. The planning for such ‘smaller-scale’ incidents would be extremely difficult to detect, and consequently, to deter or warn against.

Theater-range *ballistic and cruise missile proliferation* is another growing challenge. I expect the numbers of ballistic missiles with ranges between 300-3,000 kilometers to

increase four-to-five fold during the next 20 years and to become more accurate and destructive. Likewise, the potential for widespread proliferation of land attack cruise missiles is high. While the types of missiles most likely to be proliferated will be a generation or two behind the global state of the art, states that acquire them will have new or enhanced capabilities for delivering WMD or conventional payloads inter-regionally against fixed targets. Major air and sea ports, logistics bases and facilities, troop concentrations, and fixed communications nodes will be increasingly at risk.

The increased potential for regional WMD use has profound implications. Beyond their sheer destructive potential, the very possession of these weapons can quickly and dramatically change perceptions of regional power balances, force states to behave differently (and perhaps unpredictably), change the decision process (for both local and outside powers) concerning their involvement in regional conflicts, and complicate US contingency planning and execution.

The continuing and growing threat from weapons of mass destruction and the means to deliver them, including not only missiles and aircraft, but maritime and ground delivery, is evolving toward the greatest threat to our homeland and to our vital national interests.

Large Regional Militaries

The United States and its closest allies are moving rapidly toward ‘technology-information age’ military capabilities – digitized and automated tactical forces, fifth-generation fighters, advanced battle management systems, fully networked sensor-to-shooter architecture, advanced intelligence, surveillance, reconnaissance, and target acquisition, precision logistics, and so forth. In most of the rest of the world, the largest militaries will continue to field primarily ‘industrial age’ forces. By this I mean that the bulk of their capability will be based on large infantry and armored formations, massed artillery firepower, third- and fourth-generation fighter aircraft (F-15, F-16 equivalents), and centralized, hierarchical command-and-control structures. These forces are not designed for power projection, but rather are configured to present a substantial localized capability against neighbors and internal conditions.

Over the next ten to twenty years, these nations will strive to augment their mass-and-maneuver force structure with selected high-end capabilities, including: WMD and missiles, satellite reconnaissance, precision strike systems, global positioning, advanced air defense systems, and advanced anti-surface ship capabilities. ***It is likely that in any large regional conflict beyond 2010, US forces will face ‘hybrid’ military opponents that combine the mass and firepower of a late-20th century force with some more-advanced systems and concepts.***

On paper, such forces would be hard pressed to match our dominant maneuver, power projection, and precision engagement capabilities. Most would prefer not to

engage in traditional conventional warfare with the US. But in an actual combat situation, ***the precise threat these forces pose will depend on the degree to which they have absorbed and can apply key 21st century technologies, have overcome deficiencies in training, leadership, doctrine, and logistics, and on the specific operational-tactical situation.*** One of the key issues we must work to overcome and to guard against is technology surprise, where an opponent is able to develop, acquire and use a technology that may give them a circumstantial (lethal) advantage, which we did not anticipate. Under the right conditions, their quantitative capability, combined with situational advantages – e.g. initiative, limited objectives, short lines of communication, familiar terrain, time to deploy and prepare combat positions, and the skillful use of asymmetric and asynchronous approaches – will present significant challenges to US mission success. China, Russia, India, Pakistan, Iran, an unimpeded Iraq, and North Korea – are examples of militaries that could field large forces with a mix of current and advanced capabilities. These forces could directly challenge US and allied forces in a limited or regional conflict, particularly in the post-2010 timeframe.

China. The largest of the hybrid forces will be China's. Beijing is modernizing its best units (perhaps ten percent of the force overall) at a steady pace, consistent with the country's overall emphasis on general economic development. ***By 2010 or so, these select forces will have achieved a reasonably high level of proficiency at 1980s-style maneuver warfare,*** though they will probably not fully master large, complex joint service operations until closer to 2020. Nevertheless, this portion of the Chinese force structure will be relatively well equipped with thousands of theater-range missiles, hundreds of fourth-generation aircraft, thousands of 'late Cold War equivalent' tanks and artillery, a handful of advanced diesel and third generation nuclear submarines, and some 20 or so new surface combatants. They are also likely to field an integrated air defense system and modern command-and-control systems at the strategic and operational level.

Russia. Russia's forces are likely to become another hybrid. Russia has a rich military tradition and has many 'pacing technology programs' in research and development. But chronic underfunding and a host of related problems have devastated Russia's general purpose forces. ***There is little chance that Moscow's conventional forces will improve significantly during the next decade, unless radical change occurs*** – the enormous political, economic, and social problems confronting Russia virtually preclude that outcome. However, if Moscow can begin recovery from its economic and political crisis in the next few years, and the military receives stable, consistent leadership and resources, Russia will be able to begin rebuilding an effective military toward the end of the next decade, and field a much-improved force around 2015-2020. Under 'optimum' (for Russia) conditions, this force would be large and potent by regional standards, equipped with thousands of late-generation Cold War systems, and hundreds of more-advanced systems built after 2010. This view of Russia as a strengthened regional power is one scenario out of several, and may not be the most likely outcome, depending largely on the policy decisions of the Russian government and the development of the Russian economy.

North Korea remains the country most likely to involve the United States in a large-scale regional war scenario over the near term (the next five years or so). Should war occur, Pyongyang's very large, heavy, forward-deployed forces – especially their artillery, rocket and short-range missile forces – their extensive underground facilities, WMD, longer-range missiles, and special operations force capabilities, combined with the time, distance, terrain, and other strategic features of the dynamic of war on the Korean peninsula, would pose a significant challenge for allied forces. War in Korea would be incredibly violent and destructive. Over the longer term, the North's dire economic and internal security situation will continue to undermine military readiness and forestall widespread military modernization, even as select elements of the force – particularly WMD, long-range missiles, and special operations forces – continue to receive priority. North Korea presents a challenging dilemma: a 'failing' state with rising internal pressures, diminishing conventional military capability, but posing an increasing regional and global threat by virtue of its expanding WMD and long-range missile capabilities.

Iraq. Baghdad seeks to rebuild the forces it lost in the Gulf War, but will be unable to do so effectively so long as United Nations sanctions remain in place and effective. Moreover, Iraq's military options will remain limited in the face of US and allied presence and commitment. Over the longer term, assuming Iraq's leadership continues to place a high premium on military power, is able to 'get around the sanctions regime' sooner rather than later, and that the price of oil rebounds, Baghdad could, by 2020, acquire a large inventory of WMD, hundreds of theater ballistic and cruise missiles, triple its inventory of 4th generation aircraft, and double its fleet of armored vehicles. ***While this force would be large and potent by regional standards, its prospects for success against a western opponent would depend ultimately on how successful Baghdad was in overcoming chronic weaknesses in military leadership, reconnaissance and intelligence, morale, readiness, logistics, and training.*** I forecast a continuing set of very challenging and contentious circumstances involving the complex political, cultural, and geographic conditions in which Iraq exists. Absent a fundamental change in governance, uncertain circumstances and a revitalization of military capability will be Iraq's direction.

Iran. Tehran's steady military buildup is designed to increase its influence in the Middle East and Central Asia, deter Iraq or any other regional aggressor, and limit US regional influence. ***Iran recognizes that it cannot hope to match US military power directly and therefore seeks asymmetric and asynchronous means to challenge the US indirectly:*** through subversion and terrorism, the development of air, air defense, missile, mine warfare, and naval capabilities to interdict maritime access in and around the Strait of Hormuz, and the acquisition of WMD and longer range missiles to deter the US and to intimidate Iran's neighbors. Over the next two decades, I expect Iran to acquire a full range of WMD capabilities, field substantial numbers of ballistic and cruise missiles – including some with intercontinental range – double its inventory of 4th generation

aircraft, triple the number of tanks and armored vehicles, and significantly improve its anti-surface ship capability. As with Iraq, Iran's effectiveness in generating and employing this increased military potential against an advanced adversary will depend in large part on 'intangibles' – command and control, training, maintenance, reconnaissance and intelligence, leadership, and situational conditions and circumstances. The economy of Iran is perhaps the single pivotal factor in its ability to form the future as Iran would like it.

With the exception of the situation in Korea, during the next decade or so, the threat of large-scale regional conventional war involving the US will likely remain limited. Most potential adversaries recognize our general military superiority, and for a variety of reasons, will not significantly improve their capability to present a direct conventional challenge during that time. ***Beyond 2010, however, and certainly by 2020, there is an increased possibility that the major regional military powers will measurably improve their forces and, under the right circumstances, can directly threaten our mission success in a given regional situation or conflict.*** The dilemma for US force planners is maintaining our capability over the near term to deter regional aggression, while improving our future capability to deal with the expanded regional threat posed by large 'hybrid' forces. Many factors, including the development of advanced lethal technologies, and the potential for alliances and coalitions to form, may radically alter these conditions.

The Changing Nature of Warfare

"... The conduct of war branches out in almost all directions and has no definite limits ..." Clausewitz

The dynamic and diverse global condition, the near-universal recognition of US conventional military superiority, and the age-old interplay between war and peace, threat and response, offense and defense, and military art, science, and technology are fundamentally changing the nature of the threats we face, and the nature of warfare itself. It is nearly impossible to predict precisely how these factors will play out – in terms of the motives, vulnerabilities, capabilities, timing, locale, and technological sophistication of specific threats. Nevertheless, by recognizing vital US interests, understanding why people, leaders, and states engage in warfare, and acknowledging the interaction between a potential enemy's capability, intent, and will, it is possible to discern the outlines of a new threat paradigm and to assess emerging warfare trends and methods.

The Emerging Threat Paradigm

... More Diverse and Multipolar

The bipolar (Cold War) threat has been replaced by a more diverse and multipolar set of generalized entities* and conflict conditions. These include:

- **Partners** ... who generally share our values and can frequently be considered military allies.
- **Competitors** ... who may or may not share our values, compete with us in a variety of fora, but are not military adversaries.
- **Adversaries** ... who generally have values and interests contrary to ours, but lack the wherewithal to actively oppose us.
- **Renegades** ... who engage in unacceptable behavior frequently involving military force and violence, are current or potential enemies of the US, and against whom we must anticipate the active use of military force.
- **Emergency circumstances** ... generally involving humanitarian relief operations, various 'peace operations,' other operations short of war, and environmental or natural disasters that require the application of military resources.

This new threat paradigm has significant implications for US military planning and force development. During the Cold War, the predominance of the Soviet threat, and the bipolar nature of superpower competition, allowed for substantial continuity in US defense planning and force development. 'Containment' provided the basic context for all US security policy decisionmaking. Meanwhile, Soviet doctrine, warfighting concepts, and equipment – combined with Warsaw Pact-NATO force ratios and mobilization potential, and the unique terrain and geographic features of Central Europe – provided the basis for our doctrine, strategy, tactics, and materiel development, our force sizing criteria, our equipment, operational, and organizational requirements, and our functional characteristics. Within this broad 'Soviet threat' paradigm, other force requirements were generally considered lesser-included cases, on the assumption that if the US could handle the Soviets in Central Europe, we also could handle everything else.

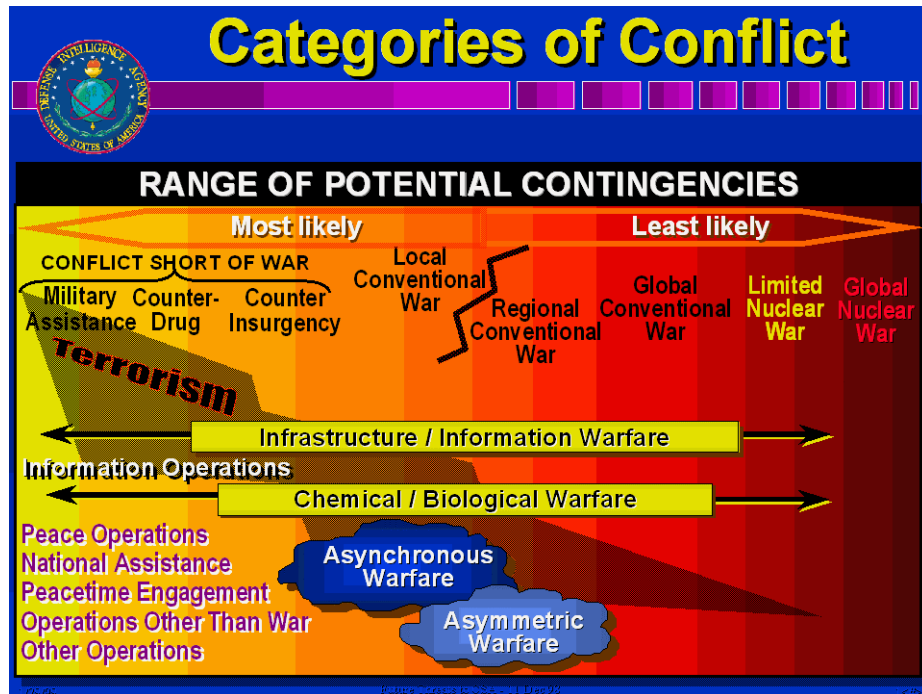
Under the new paradigm, threats are more diverse and complex, and much harder to plan for. For instance, North Korea and Iraq, currently our most likely opponents in a major theater conflict, pose significantly different challenges in terms of their tactics,

* It is important to realize that many of these entities do not conform to traditional state or alliance definitions. Rather, they transcend political boundaries and territorial limitations. Circumstantially, a state or non-state entity can fall into different categories depending on the specific issue and situation at hand.

equipment, and capabilities, and the theater terrain and locale. Neither state presents a pacing technology threat, although North Korea is likely to possess nuclear capability. Meanwhile, Russia, China, and other European and Asian powers represent our most important military technological ‘competitors,’ but we are not likely to face any of these states in a direct military conflict during the next ten-to-twenty years. Similarly, our most pressing current challenges – operations other than war, terrorism, narcotics trafficking, and other criminal activity with national security implications – and the biggest emerging threats – weapons of mass destruction (WMD) and missile proliferation – have limited utility as the basis for sizing and defining future force requirements.

... A Wide Spectrum of Potential Contingencies

US forces may be required to engage in operations across the conflict spectrum – from conflict short of war at the low end, through conventional war (both local and regional), to global nuclear war at the high end. However, operations at the lower end of the spectrum – military assistance, peace keeping, humanitarian assistance, and limited local or regional conflict – are most likely to occur. With some exceptions, notably Korea, large-scale conventional war and nuclear war are far less likely to occur, so long as the US retains significant deterrent capabilities. This condition poses a dilemma for force planning – how to structure and size forces across the spectrum of potential conflict and still optimize some forces for the most likely contingencies. While this challenge is probably most acute for the US, given our global interests, it also must be faced by many other nations who aspire to major power status.



... Simultaneous Operations the Norm

The idea that single events happen in isolation and can be dealt with in a singular manner is more unlikely than ever. The global impact of technology, the integration of global systems, the blending of some cultures, and the effect of long range weapons and transnational threats of all kinds, have contributed to the ‘networked’ world we now see evolving. *The future condition of our social order is likely to be challenged and threatened not by a single event or opponent but rather by the net effect of several – even many – conditions and circumstances*, which when combined have much larger and more significant consequences than may have been realized. Indeed, one can imagine a ‘millennial net effect’ in which the Y2K problem, localized conflict, incidental events, unintended consequences (in the networked world), the millennial expectation, fear of the unknown, and the effects of weather and other natural phenomenon (earthquakes), combine with religion and culture to create an expectation of radical change.

... Many Different Paths

There are many views on the nature of future war. At one end of the spectrum are those who foresee a global revolution in military affairs brought on by the application of advanced technologies and innovative doctrine – particularly advances in the areas of information management, remote sensing, precision strike, and fully automated sensor-to-shooter links – to the organization and execution of military operations. At the other end are those who believe that dominant social trends – notably ethnic conflict, population and resource imbalances, and urbanization – combined with a general recognition of western military superiority, will drive warfare toward the ‘lower end’ of warlords and paramilitary-like forces engaged in brutal, but limited (and often urbanized) local conflicts. *Unfortunately, advocates of these and other views often speak as if one of these futures automatically precludes the other and that – contrary to Clausewitz’s reminder – warfare will evolve along a single path. Nothing could be further from the truth.*

There are a number of trends – some contradictory – underway at present that will determine how war and conflict will be waged in the future. Understanding and anticipating how these trends will unfold is one of our key challenges.

... The Impact of Technology – Technowar

The rapid pace of military technology advancement – particularly in the areas of precision weapons, information management and automated communications – will continue. *Major technological breakthroughs in military capability will happen in the next two decades. Some aspects of our technological dominance – especially those with commercial and industrial applications – will be difficult to maintain* because the

transfer of these capabilities will initially appear as primarily civilian or dual-use events. One of our greatest challenges is that a rogue nation or sub-national group might acquire key technologies, which would lead to some form of strategic technical surprise.

Overall, the impact of applied automation and computers, electromagnetic warfare, brilliant sensors, and the other technologies listed below will lead to the rise of a military-techno culture in which time, area (space), distance, speed, and other fundamental conditions are radically changed. ***The following developments have the potential to dramatically alter the nature of warfare and the characteristics of future threats.***

- Nuclear, chemical, biological, radiological weaponization and proliferation
- Long range missiles and related technologies
- Brilliant sensors
- Space-based communications, sensing, and weapons applications
- Precision munitions
- Electrodynamics weapons
- ‘Conventional’ weapons of mass destruction
- Non-lethal weapons
- Information technology and cybernetic warfare
- Camouflage, cover, concealment, control, denial, and deception (C4D2)
- Techno-terrorism
- Nanotechnology
- Applied biotechnologies
- Other ‘New Sciences’

... Declining Defense Resources

To date the development and integrated application of the most important military technologies and concepts has been limited to the advanced western militaries -- particularly the United States. One key reason is economic. In general, these technologies are very expensive to develop and maintain, and most nations have emphasized other priorities since the end of the Cold War. In fact, non-US global defense spending has dropped some 40 percent since the late 1980s, and the ‘military modernization accounts’ – research and development, and procurement – have been hit even harder. Moreover, during the same period, the global arms market has decreased by more than 50 percent. With reduced domestic procurement, declining foreign consumption, and other spending imperatives, many nations have had neither the motivation, the resources, nor the capability to pursue high technology military endeavors. If these trends continue, we can expect more significant reductions and consolidation in the global defense industrial base, which will have important implications for the level of technological threat we will encounter, and for our own military-technological competitiveness.

These twin developments – increasing military technological potential, combined with constrained defense spending worldwide – ***make it very difficult to forecast just which technologies, in what quantity and form, will make it into the military systems of***

future adversaries. In many cases, the question will no longer be which technologies provide the greatest military potential, but which will receive the political and resource backing to reach the procurement and fielding stage. In a related trend, civilian technology development is now driving military technology development in many countries. This puts a higher premium on understanding how potential adversaries link their civilian and military research and development programs, and on identifying those nations that are innovative in applying (vice developing) advanced technologies to military ends.

... New (Modified) Forms of Warfare

Technology, combined with the creative ideas of military thinkers around the world, is leading to the development and application of new forms of warfare, and the innovative modification of traditional military practices. While the US and its allies are the source of much of this innovation, others are driven by the dominant military position of the US, and our demonstrated commitment to maintaining our military lead. This basic reality is forcing many of our adversaries (current and potential) to seek other means to attack our interests. *In general, we can anticipate an environment in which adversaries seek to avoid traditional conventional warfare with the US, to pursue various strategies to preclude or diminish our military options, and to threaten or use WMD.* Some of the more important 'new forms of warfare' include:

- *Information Warfare (IW)* ... actions taken to degrade or manipulate an adversary's information systems while actively defending one's own. Over the next two decades, the threat to US information systems will increase as a number of foreign states and sub-national entities emphasize offensive and defensive information warfare strategies, doctrine, and capabilities.
- *Cybernetic warfare (CYW)* ... a distinct form of information warfare involving operations to disrupt, deny, corrupt, or destroy information resident in computers and computer networks. One particularly troubling form of 'war in cyberspace' is the covert modification of an adversary's data and information systems. This form of warfare will grow in importance as technology makes new methods of attack possible. Cybernetic warfare defies traditional rules of time and distance, speed and tempo, and the conventional or traditional military capabilities of the opposing elements.
- *Transnational Infrastructure Warfare (TIW)* ... attacking a nation's or sub-national entity's key industries and utilities – to include telecommunications, banking and finance, transportation, water, government operations, emergency services, energy and power, and manufacturing. These industries normally have key linkages and interdependencies, which could significantly increase the impact of an attack on a single component. *Threats to critical infrastructure include those from nation-states, state-sponsored subnational groups, international and domestic terrorists, criminal elements, computer hackers, and insiders acting as agents for others.*

- ***Asymmetric warfare*** ... attacking an adversary's weaknesses with unexpected or innovative means while avoiding his strengths. The concept of utilizing asymmetric approaches is as old as warfare itself. In the modern era, many forms of asymmetric attack are possible – to include the newer forms of warfare outlined above, terrorism, guerilla operations, and the use of WMD. Because of our dominant military position, ***we are very likely to be the focus of numerous asymmetric strategies as weaker adversaries attempt to advance their interests while avoiding a direct engagement with the US military on our terms.*** If forced into a direct conflict with the US, those same adversaries are likely to seek ways of 'leveling the playing field.'
- ***Asynchronous warfare*** ... the concept of a significant time lag between attack and response. This may involve a preselected or delayed (timed) attack on an adversary, taking advantage of the passage of time to develop a strategic opportunity or to exploit a future vulnerability. In a preselected attack, the operation has a latent effect on the adversary. Human or technical assets are strategically placed well before – sometimes years before – the actual confrontation. A delayed attack – often carried out as an act of reprisal months or even years later – may be designed to hit the enemy after his guard has been lowered. ***For US decision-makers, an extended time delay between an enemy's attack and our response can undercut international support for our actions. Some enemies, recognizing our penchant for 'proving' culpability before striking back, may seek to exploit this condition. Using time to weaken our resolve and to sap our resources must also be anticipated, especially in conflict situations in which a final or decisive resolution does not occur.***

... Security

Global telecommunications, broadly applied automation, the attendant effects of much information being resident in many different places – accessible by many people, and more aggressive and pervasive public media coverage of military operations, have combined to challenge our traditional concepts of operational security and secrecy. We live and work in a much more transparent environment in which the restriction of any information from the public domain is challenged by this new paradigm. This condition has both positive and negative effect. ***Much more information is now available to the public, but some information endangers military plans and intentions and puts military operations and personnel at risk.***

The result has been the compromise of intelligence and operational data, obtained at great cost to the American taxpayer, in the public domain and coincidentally to our enemies and adversaries. In some cases we have lost the element of surprise, we have lost the initiative, and we have endangered or lost sources of information that are important windows into what our opponents are doing. I do not have a clear solution to recommend, but feel it is my duty as a military officer who is entrusted to secure such information to bring this to your attention as a matter of great concern.

Conclusion

Dynamic change and great uncertainty have marked the past ten years. The next two decades are likely to be equally so because the basic engines of turmoil remain largely in place. The volatile mix of global political, economic, social, technological, and military conditions will continue to bring great stress to the international order. ***No condition, circumstance, or power is likely to emerge over the next 10-20 years that will somehow transcend these ‘sources of instability’ and lead to a more stable global order.***

There is little chance the US will confront a Soviet-like global military challenger during this timeframe. Nevertheless, threats and threatening conditions exist today, and others will emerge over time. Collectively, the combined impact of numerous local, regional, and transnational challenges presents a formidable obstacle to our strategic vision.

The global presence of the United States – our tremendous power, influence, and willingness to remain engaged – is the key factor affecting the future shape of the international security environment. During the next two decades a new security paradigm will evolve – one in which the United States faces a generalized global set of competitors and potential adversaries, the troubling proliferation of ‘negative’ technologies, and the existence and – at times rapid – emergence of numerous persistent small-conflict conditions and situations. The new global condition affects every aspect of our effort, including the planning and execution of current operations, and the development of the strategy, organization, and equipment that will shape and define our future forces.

One of the most important challenges facing the Defense Intelligence Community is to discern from the general global condition a more specific characterization of emerging threats. This characterization must be detailed and timely enough for our political and military leaders to prevent, deter, or prepare for those threats before they become reality and to fight and win against our enemies if that becomes necessary. We in the Defense Intelligence Community remain committed to providing the best possible military intelligence support to US and allied leaders engaged in planning for and acting in any contingency or crisis.

“Men will not believe what does not fit in with their plans or suit their pre-arrangements. The flaw in all military intelligence, whether twenty or fifty or one hundred percent accurate, is that it is no better than the judgement of its interpreters, and this judgement is the product of a mass of individual, social, and political biases, pre-judgements and wishful thinking; in short, it is human and therefore fallible.”

Barbara Tuchman

