

Rethinking Future Environments and Strategic Challenges to U.S. and International Security: Time to Cowboy Up!

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Caveats

- In the last Rethinking Future Environments and Strategic Challenges seminar, General Hayden's views came from the perspective of a long-time intelligence professional
- My thoughts will be informed primarily by my time in the Department of Defense, **while considering specific national security threats and the changes to the defense program and budget necessary to address them**
 - More diagnosis than prescription
- If forced to choose, my thoughts on foreign policy and national security derive primarily from the realist school
- And, like Ralph Peters, I like to take "...a 'GPS approach' to strategy...The first thing you have to understand about the historical moment is where we are"...and, I'll add, how we got here

This Will be a Brief in Two Chapters

- **Prologue: The End of the Post-Cold War Era**
- **Chapter 1: How Might the Next 20-25 Years Resemble, or Differ from, the Past 25 Years?**
- **Chapter 2: What Must the Department of Defense do to Prepare and Compete in the Emerging (Global?) Era**

Prologue: The Post-Cold War Era

- **In the beginning:**

“Forty years of perseverance have brought us a precious opportunity, and now it is time to **move beyond containment to a new policy for the 1990s**—one that recognizes the full scope of change taking place around the world and in the Soviet Union itself?

President George H.W. Bush, Texas A&M University, 12 May 1989

- **1989: from a plans programmatic perspective, President Bush’s speech marks the end of the Cold War and the beginning of the the Post-Cold War Era in U.S. foreign and national security policy**

Looking Back, Nostalgically: Characteristics of the Post-Cold War Era

- **Uncontested U.S. primacy**
 - In 1994, U.S. possessed 25% of world GDP, controlled 40% of global defense outlays
 - In addition, U.S. allies possessed 47% of world GDP, 35% of global defense outlays
- **Absence of great power competition**
- **Absence of any serious international ideological competition**
- **Generally good multilateral cooperation in addressing global disorder**

“The Upheaval,” Hal Brands and Eric Edelman, *The National Interest*, July/Aug 2017

All Good Things Must Come to an End

- **2014:**
 - China begins massive dredging operations centering on the seven reefs it controls in the Spratly Islands -- Fiery Cross Reef, Subi Reef, Mischief Reef, Cuarteron Reef, Gaven Reef and Hughes Reef; and
 - Russia illegally annexes Crimea and destabilizes Eastern Ukraine
 - Both activities were consistent with Great Powers taking steps to secure their borders and “near abroads”
- **2014 thus marks the end of the Post-Cold War Era, and the start of a new (Global?) Era in U.S. foreign and national security policy**
 - The Post-Cold War Era was a relatively coherent 25-year period

Chapter 1: How Might the Next 20-25 Years Resemble, or Differ from, the Past 25 Years?

- **Although the U.S. is already three years into the new (Global?) Era, as of yet it lacks a strategy to guide its foreign and national security policy**
 - The longer we wait, the more time we lose
- **Any new strategy must account for five ongoing structural shifts that will likely shape policy for the next two decades (again, Brands and Edelman):**
 - The erosion of U.S. and Western primacy
 - U.S. share of global GDP and defense spending have declined to 22 and 34%, respectively
 - Allied shares are 39 and 25%, respectively
 - **The return of Great Power competition**
 - The reemergence of global ideological struggles
 - A general intensification of global disorder
 - And pronounced uncertainty about the willingness and staying power of the chief defenders of the post-Cold War system

It is Fashionable to Declare we Find Ourselves in “the Most Dangerous International Security environment” in 70 years

- For those who “fought” the Cold War, this is the height of conceit
- That said, echoing Henry Kissinger in 1969, it is safe to say that:
“The current international environment is in turmoil because its essential elements are all in flux simultaneously.”
- Consequently, it also seems safe to say that the next 20 years will be far more strategically taxing than the last 25 years
 - The return of Great Power competition alone would make this true, let alone when combined with the other four ongoing shifts since the post-Cold War Era
- As a result, it’s past time for the U.S. national security apparatus to “cowboy up” and raise its strategic game
 - As General Hayden observed, for a variety of reasons, the U.S. national security apparatus is now incredibly tactically oriented and focused
 - Once again, it is time to start exercising our “grand strategic muscles”

(At Least) Seven Big National Security Challenges Arise from the Five Ongoing Structural Shifts

- **Given the turmoil in the international security environment, there are at least seven big national security challenges that are easy to foresee:**
 - Competing with Great Powers in peace while avoiding Great Power war
 - Deterring and responding to both old and new means of strategic attack
 - Managing the continued destabilization, disintegration and reintegration (?) of the Greater Middle East...at a lower, sustainable strategic cost
 - Contending with nuclear-armed minor powers
 - Dealing with the culmination of the Guided Munitions-Battle Network Revolution
 - Operating in newly or more hotly contested operational domains
 - Preparing for and withstanding a looming technological tsunami
- **The following slides will cover each in turn**

Competing with Great Powers in Peace While Avoiding Great Power War

- **The United States must once again focus and organize itself for a major strategic competition—this time against two geopolitical rivals**
 - China is pursuing a new Sino-centric regional order and envisions itself as one of, if not the key, international ruler makers by 2050
 - Russia is contesting key aspects of the Post-Cold War Era and is moving to solidify control of its near abroad
 - While not (yet) in a formal counter-coalition, both China and Russia are both questioning and contesting the U.S.- led international order
 - This competition will include an important ideological dimension: democracy vs. authoritarianism
- **Key end: compete, confront and contest our rivals while avoiding Great Power War**
 - Pursue “comprehensive strategic stability” (Tom Ehrhard)
 - Maintain strategic parity and strengthen conventional deterrence
 - Exploit a key competitive advantage: strong alliances
 - Confront and contest ambiguous “Gray Zone” activities and be prepared for proxy wars
 - Expect—and accept—that U.S. freedom of action will be much more constrained

Deterring and Responding to Both Old and New Means of Strategic Attack

- **Unless there is a major (and unexpected) development, the need to maintain strategic nuclear parity with our great power rivals demands we maintain a strong nuclear deterrent**
- **Must deter and respond to large-scale, cyber counter-value strikes**
- **Must deter and respond to increasingly sophisticated societal and governance cohesion attacks**
- **Must deter and respond to potential genomic population attacks**
- **Must think hard about and develop a new theory of deterrence (e.g., “lattice deterrence”)**
- **And, as the distinction between the “home” and “away” games starts to blur, more attention must likely be paid to homeland defense**
 - This will likely divert resources from other defense activities

Managing the Continued Destabilization, Disintegration and Reintegration(?) of the Greater Middle East...at a lower, more sustainable strategic cost

- **The Greater Middle East, spanning from West Africa to Central Asia, will remain a cauldron of disorder for some time**
 - Competition for regional hegemony between Tehran and Riyadh
 - Breakdown of governance
 - Sectarian strife between Shi'a and Sunni Muslims
 - Hotbed for violent extremist organizations (VEOs)
 - And, increasingly, a region of great power competition
- **U.S. strategic attention will inevitably be drawn to this region**
- **However, given the return to great power competition, the U.S. must avoid being drawn into a “strategic cul-de-sac”**
 - Under any circumstances, it must accomplish its regional goals more economically than it did in the Post-Cold War Era (both in terms of costs and forces)

Contending with Nuclear-Armed Minor Powers

- **Regional nuclear deterrence will remain a critical focus over the next 25 years**
 - Hostile powers with demonstrated nuclear capability (e.g., DPRK)
 - Hostile powers that aspire to a nuclear capability (e.g., Iran)
 - Unstable powers with demonstrated nuclear capability (e.g., Pakistan)
 - Friendly nations that seek an independent nuclear capability(?)
- **Whither extended deterrence?**

Dealing with the Culmination of the Guided Munitions-Battle Network Revolution

- **The Guided Munitions-Battle Network Revolution was spurred by the so-called “Second Offset Strategy” (2OS), pursued by the U.S. during the Cold War to counter Soviet/Warsaw Pact numerical conventional superiority**
- **U.S. great power competitors have used 2OS technologies to assemble powerful anti-access/area-denial (A2/AD) networks**
 - **Designed to deter, delay or defeat U.S. power projection operations in their “near-abroads”**
- **In the process, both Russia and China have achieved rough parity with the U.S. in the Guided Munitions-Battle Network regime**
- **Moreover, 2OS technologies are proliferating around the world**
- **As a result, U.S. conventional overmatch is steadily eroding and the U.S. will find it more difficult and costly to project power against state adversaries**

Operating in Newly or More Hotly Contested Operational Domains

- **Because of the culmination of the Guided Munitions-Battle Network Revolution, operations on land, in the air, and on the sea will be more contested than in the Post-Cold war Era**
- **Two domains will be particularly more hotly contested**
 - Space
 - No longer a sanctuary
 - Electromagnetic spectrum
 - “Informationalized warfare”: cyber, electronic warfare, info ops
- **There will be at least one newly contested domain**
 - Near space (~100,000 to 320,000 feet)
 - Realm of hypersonics
- **U.S. undersea dominance is likely to be challenged over the next 20 years**
- **A Joint Force built for contested, multi-domain operations will be more expensive**

Preparing for and Withstanding a Looming Technological Tsunami

- **The world is in the midst of rapid, unprecedented technological change:**
 - Advanced computing (e.g., quantum, deep neural networks) leading to AI
 - AI and Big Data leading to machine learning
 - Machine learning leading to increasingly capable autonomous systems and robots
 - AI/Big Data/Machine learning and additive manufacturing will lead to an AI-driven 4th Industrial Revolution
 - Genomics and synthetic biology
 - Nanotechnology, material sciences and additive manufacturing
- **This tsunami will sweep away older ways of doing business and bring with it the prospect for new military-technical revolutions**
- **Because most of these new technologies are derived primarily from the commercial sector and are dual use, the competitive landscape will be much more level and dynamic than in the past**

Chapter 2: What Must DoD do to Prepare and Compete in Emerging (Global) Era?

- **Given the breadth of these seven key national security challenges, DoD must first and foremost improve its institutional resilience, flexibility, and adaptability**
 - These challenges are both inter-related and complex, and will present themselves in an equally complex security environment
 - The next 25 years will therefore likely be a time of unexpected events, unexpected technical developments, and fast followers
 - Operational and technological surprise is likely to be endemic
 - Operational advantage will likely be fleeting
- **An important, if not the most important, aspect of this preparation is recruiting, training and retaining the right talent**
 - The competition for talent will be especially intense with the private sector, and even our strategic competitors

In the Near Term, the Department Must Address 5 Top Operational and Programmatic Challenges

- These challenges derive from Secretary Mattis's top priority: **“Rebuild a safe & credible Nuclear-deterrent, while maximizing Lethality and Readiness of a decisive-conventional-force.”**
 - Recapitalize the nuclear triad
 - Own the Electromagnetic Spectrum
 - Prepare to fight and win in space
 - Pursue “Third Offset” technologies, especially AI and improved autonomy
 - Develop new operational and organizational constructs for conventional overmatch

#1: Recapitalize the Nuclear Triad

- **We must recapitalize all three legs of the nuclear triad...simultaneously**
 - Land-based leg: Ground-based Strategic Deterrent (GBSD; replaces Minuteman III)
 - Sea-based: Ohio Replacement Program (ORP; replaces Trident SSBNs)
 - Air-based leg: B-21 + B61 LEP + Long-Range Strike Option (LRSO; replaces ALCM)
- **All service margin is out of the triad; we must start to develop and field replacement systems before their predecessors age out**
- **I assume we will build deployed warheads to New START numbers**
- **Under any circumstances, the triad recap will be expensive, and divert resources from the conventional portfolio**

#2: Own the Electromagnetic Spectrum

- **Cyber harden DoD networks**
 - Most networks require more extensive cyber hardening
 - Taking too long; significant vulnerabilities remain
- **Cyber harden the DoD IoT**
 - Most legacy systems were built before cyber threats were well understood, or worried about
 - Services not paying nearly enough attention to this problem
- **Invest in more and better operational and tactical cyber and electronic warfare systems, tools and decoys**
- **Practice, practice, practice**
 - Realistic force-on-force training
 - EMCON, EM deception

#3: Prepare to Fight and Win in Space

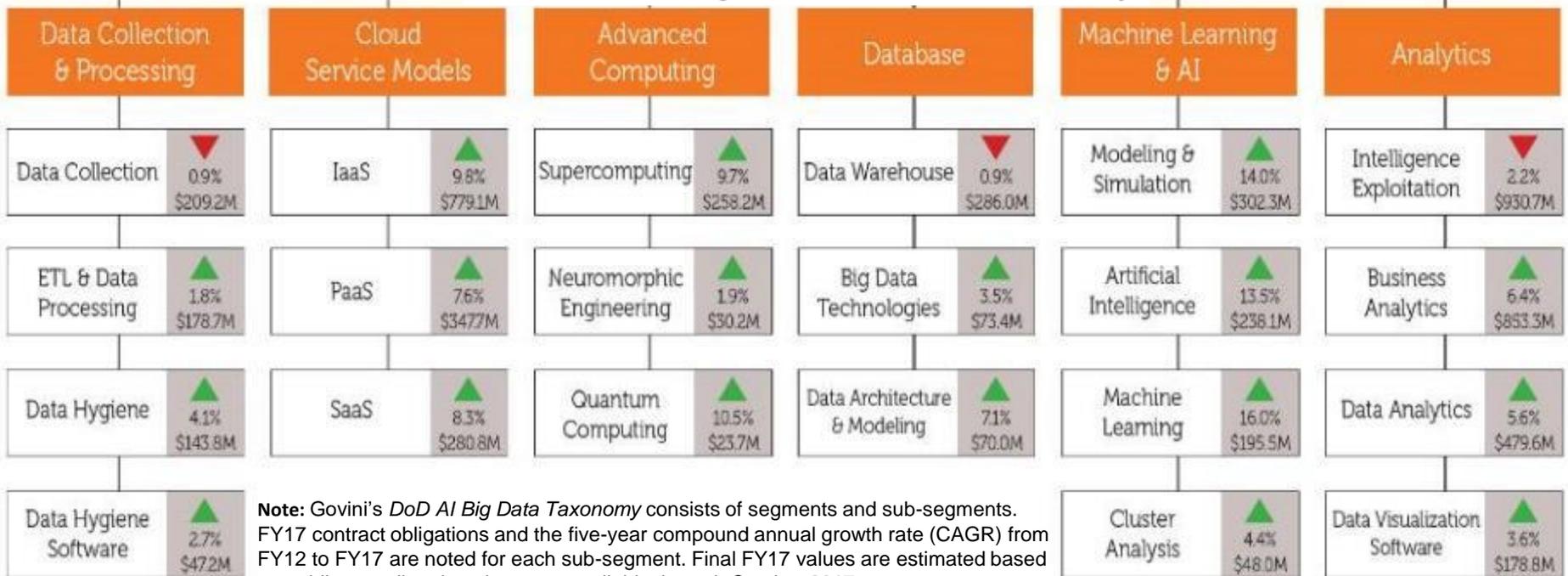
- **Start with culture: create a warfighting force that thinks less about providing a service to one that is trained and prepared to fight and win a space fight**
 - AFSPACECOM to sub-unified command
- **Build a more resilient architecture, and improve space BMC2**
 - Need improved ability to operate our space constellation while under attack
- **Be prepared to take the fight to the enemy, in space**
- **Provide uninterrupted space-based combat support to the Joint Force and our allies**

#4: Pursue “Third Offset” Technologies, especially AI and Improved Autonomy

- **Of all the different ongoing technological developments, AI and improved autonomy will likely result in the greatest near-term improvements to DoD operations across the full range of military operations (ROMO)**
 - Aim: Human-machine Collaborative Battle Networks, defined by better:
 - Machine learning
 - Human-machine collaboration (using machines to make more timely and better decisions)
 - Assisted human operations—bringing the power of the battle network to the individual operator
 - Human-machine combat teaming
 - Cyber and EW-hardened, network-enabled, collaborative autonomous and high-speed weapons
- **Our Great Power competitors recognize the importance of AI and improved autonomy, and are striving for first mover advantage**
 - The AI-Autonomy Race will define Great Power military competition much like the Nuclear Race defined the Cold War
 - The AI-Autonomy Race will also define Great Power economic competition

DOD AI/Big Data Spending totaled \$6B in FY2017; We Need to Spend a Lot More, More Smartly

DoD AI Big Data Taxonomy



Note: Govini's DoD AI Big Data Taxonomy consists of segments and sub-segments. FY17 contract obligations and the five-year compound annual growth rate (CAGR) from FY12 to FY17 are noted for each sub-segment. Final FY17 values are estimated based on public spending data that were available through October 2017.

Over Time, AI will Converge with Other Technologies to Spark Novel Applications

- **Some initial thoughts from the Telemus Group, LLC:**
 - AI + quantum = accelerated machine learning; novel complex systems
 - AI + neuroscience = human-machine symbiosis
 - AI + synthetic biology + nano + additive manufacturing = fabrication at the point of use
 - AI + material science = fabrication of materials not previously considered
 - AI + social media = ability to manipulate human behavior
- **These will be the source for new military-technical revolutions**

#5: Develop New Operational and Organizational Constructs for Conventional Overmatch

- **The Third Offset is not about pursuing a technological silver bullet, although it may help spark a military-technical revolution**
- **The competitors able to inject and exploit 3OS technologies into new operational and organizational constructs will be the ones able to achieve operational and tactical advantage**
 - Multi-domain Battle (AirLand Battle 2.0)
 - Raid-Breaking (win the salvo competition)
 - CWAD: Close With and Destroy (dominate the last 2,500 meters)
- **What makes this a programmatic issue: the incentives needed to spark innovation**
 - Warfighting Lab Incentive Fund created to spark new operational concepts
 - Wargaming Incentive Fund created to supercharge wargaming to test concepts
 - Multi-domain vanguard forces?

Don't Count on Defense Budgets Big Enough to Address all 5 Challenges and Grow the Force

- **Best Case:** Congress agrees on substantial increases above the Trump Administration's defense request; does away with the defense BCA caps; and passes an appropriation bill by the expiration of the current Continuing Resolution, or CR (December)
- **Next Best Case:** Congress agrees on substantial increases above the Trump Administration's defense and non-defense requests; and passes another Balanced Budget Agreement (for two years?) by the expiration of the current CR
- **Next Best Case:** Congress accepts Trump Administration's defense and non-defense budget requests and passes an appropriation bill by the expiration of the current CR
- **Next (Not so Good) Case:** (with apologies to the Martian): Congress "OCO's the s&t" out of the defense budget
- **Worst Case:** Long-term or year-long CR

Therefore, Before Substantially Increasing the Size of the Joint Force, Hone the Force we Have

- **Goal: Best-led, best-trained, best-maintained, and most over-provisioned force in the world**
 - Pursue a new revolution in training
 - Tolerate no waivers of certifications
 - Cut presence before cutting maintenance
 - Fill magazines to capacity, and build adequate war reserve stocks
- **Pursue modest capacity gains in discrete areas (e.g., SHORAD, Patriot Bns; low cost tac aircraft)**
- **“Reposition the spigot”:** concentrate on gaining access to all Total Force capacities

Time to Cowboy Up!

- **The Post-Cold War Era saw conditions that were remarkably favorable to U.S. interests**
 - An era largely free of major strategic challenges
 - The U.S. enjoyed enormous freedom of action
 - Over time, national security apparatus became too tactically focused
- **The international security environment over the next 20-25 years will likely be fundamentally more challenging than the past 25 years**
 - 5 major structural shifts, most importantly a return to Great Power competition
 - (At least) 7 big national security challenges
 - Strategic thought once again at a premium
- **The 5 operational/programmatic challenges facing the Department of Defense will require substantial thought and resources to address**
 - We need to focus on changing the strategic competition(s) in our favor
 - First priority is to address the five challenges and hone the force we have

Time for Questions

GURF:

Guns Up, Ready to Fire!