Mr. Boot began by discussing his reasons for writing his most recent book. His previous book, *The Savage Wars of Peace: Small Wars and the Rise of American Power*, had discussed 200 years of American war. He believed that the focus of that book was too narrow so he expanded the new book to cover 500 years of wars around the world.

The first Gulf War in 1991 was very interesting
  Showed what you could do with networking
  Other technologies also made major changes in war
    Stealth
    GPS
    Precision guided munitions
Now all of these new technologies are taken for granted
  Changes they brought were really amazing
    Especially if viewed across the history of war over centuries
Previously, had to let munitions depend on ballistics – very inaccurate
  So required hundreds of aircraft to hit one major target
  Had to expect to lose many planes along the way
  Probably still would not completely destroy the target
Precision changes everything – and things are still changing
  Commanders in Washington can watch live Predator UAV feeds
  Must grapple with the implications

Is this another Revolution in Military Affairs (RMA)?
  If so, what should we do about it?
Could not find the book he wanted to read on the subject
  Wanted a full historical perspective
  What happened with previous RMAs?

*War Made New* is a series of stories about RMAs
  Starting with the Gunpowder Revolution – about 1500
    Involved other related issues/capabilities such as advances in sailing ships
About 1750 there was the First Industrial Revolution
Did not really impact warfare until about 1850
World War I was first to have the advantages of the Second Industrial Revolution
Third Revolution really involves Information

Focuses of the *War Made New*
On these 4 RMAs with emphasis on a few battles to show impacts
  Example: French invasion of Italy in late 15\textsuperscript{th} Century
    Considered the ending point of medieval warfare
Also looks at some sea and air battles
Describes battles of Westerners against non-Westerners
  Examples: British against India (19\textsuperscript{th} Century) / US against Taliban
Examines commanders and how they grappled with these issues

Major lessons in the 600 page book
  Importance of the RMAs
  Often it was not the bigger/richer force that prevailed
    Spanish Armada lost to a smaller British fleet
      Because of English skills developed in the Shot & Sail Revolution
      Weather was also a part of the loss
    In 1905 little Japan beat mighty Russia
      Saw something similar in war between the US and Vietnam
  More important: which fielded the most skillful users of new equipment/methods

Around 1500 the major powers were the Mongols and other non-Westerns
By 1800 Europe controlled 84\% of the world
  Europe mastered the Gunpowder and the First Industrial Revolution
  Also learned by battling each other constantly
  First European powers were in Iberia and then power moved further north
After the 1\textsuperscript{st} Industrial Revolution old powers fell – Hapsburgs, etc.
After the 2\textsuperscript{nd} Industrial Revolution only Soviets & US were left
With the Information Revolution the Soviets fell behind
  Could not keep pace in information or economics
  By the end of the Gulf War the US stood alone

What does it take to come out on top?
  The winning power does not invent everything itself
    Often the advances that make the most difference aren’t initially military
    Sailing ships and telegraphs were not designed for/by the military
    Most military technology was not built by the military
  This pattern of history had some variations in the 1940s-1970s
    Military/DARPA were involved in computers, internet, nuclear power, etc.
Since the 1970s more back to the normal pattern with little military involvement
Also can never keep other sides from acquiring what does get invented
    Within 4 years the other side even had the atomic bomb
    Major new inventions rarely stay the property of one state
More important is how to take advantage of new inventions
  Must be able to take better advantage of the new than the other side can
Must have a flexible organization and willing personalities take advantage

Prussia and later Germany both were able to defeat bigger / richer adversaries
Prussian General Staff figured out how to do planning better than adversaries
Had inspired leaders who could harness all new innovations
Did it after being thrashed by Napoleon’s army
Similarly, in 1940 Germany (after WWI defeat) did not have the better tanks
  Did have more two-way radios – designed by Italian-American Marconi
  Allies did not realize how important such radios would be

Technology itself creates the environment for RMAs
Each RMA had a different optimal structure
Gunpowder Revolution needed rise of monarchies to mobilize expensive armies
  Italy was overrun because it could not get small states to work together
  All were too small to fight in the new ways
  Only absolute monarchs could bring enough together for new type armies
1st and 2nd Industrial Revolutions led to welfare and warfare states
  Involved taking care of warriors and their families
  Big growth in such states from 1850 to 1950
Information Revolution now leads to flattened networks
  So information can be dispersed easily
  Empowers non-state actors
  US being left behind because of its hierarchical structure
In 1990s started talking about this RMA
  Many assumed US would lock in American dominance for decades
    No others could employ stealth / other ultra high tech capabilities
  But high end weapons have become utterly irrelevant
    Tactics are now nullifying such weapons

What’s new about terrorism?
Really as old as recorded time
New: Today can wage war on a scale greater than for any previous fanatics
There were battles with similar fundamentalists in the 1890s
  In 1898 Kitchner slaughtered thousands in Sudan
    But then no one worried about retaliatory attacks in London
    Now have to worry about such reactions constantly
US has been so successful with knitting the world together
  Using electronic networks and jet planes
  Now enemies are using these functions against the US
Seeing this in Iraq with use of IEDs – very low tech
  IEDs would not be anything that the US would field
    Even they are improving with time, experimentation
  US always is one step behind IED improvements
    US use of jammers causes a switch to trip wires, etc.
    Quick changes highlight enemy’s organizational flexibility
Basically, enemy has no command structure  
No forms to fill out to make changes  
No need to go through Congress to change weapons  

Danger is growing  
More power is being concentrated in the hands of a few  
Compare December 7th 1941 with September 11th 2001  
Japanese needed huge number of aircraft and ships to attack US fleet  
Terrorists needed only a handful of people and less than $1M  
Things could get worse with biological/chemical/nuclear/cyber attacks  
US does not have a government configured properly to handle these challenges  

US is running into the limits of technology  
In 2001 had a naïve view of technological reform  
   Wanted less boots on the ground  
   Expected wars to be fought from ships and aircraft  
Now realize that not all enemies will be as dumb as Saddam  
   Put tanks in the desert where the US could easily find/destroy them  

Not that technology is completely useless in this new era  
Need to use data mining to tap into terror networks and their behaviors  
Need to realize when things are changing  
   Enemies stop using phones and start living in caves  
We still can’t read hearts and minds or predict intentions  
   Need some way to get at this  
Can’t use technology for this  
   Involves policing, plus language and cultural understanding skills  
Iraq has been a humbling experience  
   Shows limitations of what technology can do  
Look at Germany in World War II  
   Blitzkrieg was good for some operations but not all  
       It did not work in Russia where logistic lines were too long  
Must know what you can and cannot do  

Bottom line: US needs a major transformation in thought in DoD / CIA / State / etc.  
US will continue to have best technology if only because so much spent on it  
In the 1990s US thought it could merely use its soft power to get what it wanted  
   Now much more humble  

However, must recognize that US military power underlies globalization  
If the US fails to master the information and other future revolutions, will lose  
If US does master these revolutions, can have another American century
QUESTION & ANSWER SESSION

Technology is actually the easy part
   Someone else will probably invent what you need
US needs a new structure to take advantage of new technologies
   Involves some basic skills like learning languages
   Need to create 10 times the number of Arabic speakers as we do now
   Will help with HUMINT, policing, nation building
How do you develop those sorts of skill?
   Involves wrenching changes in career paths
   Need to move away from kinetic warfare thinking/structures
   New things learned often because of losing a war
   Some of this type training already going on
      Already totally different than 5 years ago
      Being driven by demands of the battlefield
      What will happen when the fighting stops?
         Not terribly promising
   Late in Vietnam the US Army finally got good at counterinsurgency
      Afterwards only wanted to fight “real” wars
      Irregular warfare and state building were not core warfare tasks
         However, have always had to do it
         Always moved away from such tasks as soon as possible
   Need a cultural transformation
      Seems unlikely to happen without a strong impetus

What is the object of the conflict today?
   Enemies have unrealistic (to US) objectives
      A world-wide caliphate, etc.
   Enemies seem to carry out carnage just for the sake of doing it
      Without achieving any political goals
   US has a more Clauswitzian view of war
      But will not be able to avoid Iraq-type wars in the future
      US Army recoils from such wars and wants to be done with it quickly
   However, no real options
      US had to go to Afghanistan after 9/11
      On 9/10 no one was thinking of invading Afghanistan
      Maybe much like the British role in 19th Century – imposing law on the lawless
         US can’t use the same heavy-handed methods in this modern era
   If the US only focuses on what the Army is good at, will win only battles, not wars

Terrorists find it easier to kill Americans in Iraq than in the US
   So focal point of fighting is now in Iraq
      Can see this from the recently leaked National Intelligence Estimate
US problems are not as much from the actual invasion
   Problems from failure to build a stable government
      US was successful in Bosnia
No new terrorists created there
No finite number of terrorist to deal with
Enemies feed off perceived wrongs done by US
Most feed off perceived weaknesses
US went to Iraq with the idea of showing it was not afraid to go to heart of MidEast to change things
Current trends are negative
Largely because the world is now so interconnected – a US accomplishment

Generally, losers do more to innovate than do winners – more incentives
Look at Germany after Napoleon or after World War I
Look at US after Vietnam about conventional warfare
   Major changes such as all-volunteer force and Goldwater-Nichols
Look at British in naval warfare during the age of Sail and Shot
   Figured out how best to use new multi-masted ships
   Then stayed successful when changing to steam and steel ships
France was actually the leading innovator
   Brits were #2 and trying harder
   Brits had enough technological abilities to catch up to innovations
   So the Royal Navy became/stayed #1 from 1600s to 1900s
   No longer true because UK missed out on 2nd Industrial Revolution
   Missed the need for using aircraft against battleships
   US and Japan took over in WWII
   A strategic decision – did not need carriers to protect home
   Only needed them if maintained an empire
US insists that it does not do nation building – it does hi tech warfare
   That attitude is now failing the US

Is this the end of the Information Revolution because it has become so pervasive?
Unclear but Silicon Valley says more changes are coming
The early advantage that the US had has been lost
   GPS in 1991 was exotic, dramatically different – now everyone has it
   Satellite imagery then was prohibitively expensive even for countries
   Now Google Earth maps instantly available to everyone
   Same situation with night vision devices
US still trains its people better and has better structure to use such advances
Will US be able to use all the computing power that will become available soon?
   Likely to be limited by the body politic in areas such as surveillance

There is a declining trend for all centralized organizations
Three news networks now trumped by bloggers
Stockbrokers lose out to investors with computer connections
Today’s most successful organizations are the flat ones
Look at what happened in Afghanistan
   Green Berets and a few others went in with few real plans
   No one had made any plans
Had only a little information and good technology
Real secret of success was ability to make decisions on the fly
  Soldiers had very few specific orders
  Could act rapidly in ways al Qaeda could not anticipate
Stories in the media focused too much on the technologies
  More important: soldiers given freedom to do what needed doing
  Young captains were making strategic decisions
    Shows the promise of the information age
    Guys in caves could figure out what to do using networks
    Eventually Army bogged down with bases, organizations
      Some definitely needed but they slow operations
There is no blueprint on how to change things
  SECDEF and others have been talking about this for years
  No real action has been taken

RMA is based on goals
  Elements from multiple fields come together to make changes
  Involves the right organization structure, training, leadership
There is a frustration that the US is not doing better
  Has the right people
  Has the best technologies
  But not the right structure to use them well
One view is that man will always kill man so there is little that can be done
The Navy and Air Force view is that technology alone will succeed
  The enemy has no respect for anyone’s life so fight from far away
US seems to need both sides of this – both boots on the ground and technology

There is a close correlation between the means of warfare and expectations about warfare
In WWII everyone knew that bombs weren’t precise
  So expected big attacks and large losses of civilians
  There was also an element that Allies were fighting against pure evil
From Gulf War onwards have had crowing about precision smart bombs
  All those Schwarzkopf videos are now haunting the Army image
  If so precise, how could the US bomb the Chinese Embassy “by mistake?”
    No allowances for human errors
  Human relations can now stop military machines
    Just charging civilian causalities may be enough
  Enemies learned way to fight advanced democracies is by inducing guilt
In 1991 did not need to bomb cities or even the army to win
  Now paying the price
If enemy bombed into rubble (like WWII Germany) victors will be more welcome
  Unlikely that US could make such a choice now anyway
Is technology now too precise to achieve American political ends?
  US executed a great plan to reach Baghdad in 3 weeks
  But did not achieve any political objectives
Even the Israelis did not do as much as they could have in Lebanon recently
  They had both internal and external constraints
Warfare must become less a sterile bombing exercise
   Should be more about political objectives and how to achieve them

The character of countries with naval power is different from those with land power
   Europe used to mobilize peasantry for cannon fodder using bayonets
       Developed strong armies that supported or made the king
   Naval power countries tend to be more fearful of standing armies
       Quartering troops in colonial America was a major imposition
       Navies generally are not good at usurping political power
       Navies are good at protecting commerce and colonies
           More likely to be merchant/bourgeois class countries
   There is a definite correlation between types of power and government types

Appeasement in the 1930s was a strategic decision
   UK did not want to develop a land force strong enough to fighter Hitler
   Would have been foolish to fight Germany in the 30s – no fighter defenses yet
   War in Bosnia was not a war of national survival but of choice
       Had noble reasons
       Had preponderance of power so could use it at will with little cost
       Wars are more likely for countries with more power
US did develop a certain hubris because of its successes in the 1990s
   Hopefully, the Iraq experience will be enough to force necessary changes now