The Changing Character of War

Dr. T. X. Hammes
Institute for National Strategic Studies
National Defense University
THE WORLD ACCORDING TO AMERICANS

AMERICA!!!!1 WE R #1!!!!!

uninhabited

more evil-doers

they make our stuff

more evil-doers

cruise ships go here

bombs go here

wimps

coffee comes from here i think

cold!

they do our laundry

tvs and cameras

kangaroos

santa!!

MORE AMERICA!!

MORE AMERICA!!

MORE AMERICA!!
America according to the World

Idiots

Even bigger idiots
Purpose

- What drives changes in character of conflict?
- What is driving change today?
- What forms will future conflict take?

Will focus on the bad!
Underlying NATURE OF WAR does not change,

CHARACTER OF WAR changes continually
What DOD envisioned: NetCentric War
What we got
Key Question -

Why does the character of war evolve?
Character of War Reflects Societies

- Economic
- Political
- Social
- Technical

“Military institutions and the manner in which they employ Violence depended on the economic, social and political conditions of their respective states.”

*On War*, Clausewitz, Paret translation, pg. 6.
Warfare is evolving

- Widespread agreement
- What it will be – continuing disagreement
- Three theoretical paths
  - High tech
  - Insurgency
  - Hybrid
- Three types of enemy
  - State, Insurgent, Terrorist
  - Crime is always present
Nation States

- High tech
  - Anti-satellite
  - EMP
  - Cyber
  - Anti-access
  - More nuclear powers

- Surrogates
  - Hizbollah/Taliban
  - Criminal
  - Contractors

- Ambiguous
  - Cyber
  - Creeping expansionism
Non-state actors – Insurgents

- Human network – “Coalitions of angry”
  - Afghanistan, Pakistan, Iraq, ISIS
- Transnational
- Transdimensional
- Self supporting
Insurgents

Three drivers –

- 1\textsuperscript{st} driver – anti-colonial
- 2\textsuperscript{nd} driver – conflict over who rules
- 3\textsuperscript{rd} driver – identities (borders are wrong)
Implications of Third Driver

- Transborder conflicts
- Coalitions of angry and opportunists
  - Based on societies in conflict
- Historically very long conflicts
- U.S. Doctrine doesn’t work
Non-state actors - Super-empowered

- Super empowered small group
- Uses increasing power of knowledge creates “off the shelf” technology
- Loyalty to “cause” not nation
Small, smart & many
vs
Few & exquisite
4IR Converging Technologies

- Small warheads
- Drones
- Task-specific Artificial intelligence
- 3D Printing
- Cheap space
- Directed energy

Small, smart, cheap, & lethal
Small Explosively Formed Projective

10 X Explosive Power of TNT
Bring the detonator
Texas City Ship Explosion 1947

2 KT of Ammonium Nitrate
Drones + AI

**Volans-I**
- 500 miles
- Autonomous
- 20 lbs payload
- VTOL

**Flexrotor**
- 2,000 miles
- Visual/IR
- GPS Nav – Autonomous
- VTOL
- $200,000
Drones + AI

- Harpy – 400 miles
- Harop - 600 miles
- 55 lbs
- Autonomous
- Visual, IR, EMS
- Launcher
- < $500K per drone

10 years old – operational in 6 nations
Drones + AI

QX222
1500 miles – 500 lbs
Autonomous
VTOL
$2M

USN Tern
900 miles
ISR, EW, Strike
500 lbs
VTOL

- Vertical Launch & Recovery
- ISR, EW and Light Strike
- All Weather, Day/Night Capable
- EW/Comms Node
Cheap Space
3D: Capability + Volume

Autonomous
20 KM Range
$800

10,000 to 100,000
a day
Mass Launch Drones
Thinking differently

Club-K Container Missile System

6 models, stowed and deployed, including missiles
Potential employment
Slocum Glider

• Transoceanic
• GPS guided
• Commercial

Plus aerial delivered mines
Directed Energy: Lasers and Microwave

Advantage to land-based defense
- Massive power generation advantage
- Concealment

Weakness
- Lasers - smoke, haze, reflective coatings
- Microwave – Faraday cages
Hypersonics

- Probably a decade or so away for boost glide
- DoD fielding hypersonic cannon rounds
  - Range 50 miles, standard cannons
  - KE = $\frac{1}{2}mv^2$
- Will revolutionize kinetic warfare
  - Destruction of fixed facilities
Historical pattern

New concepts evolve with new tech
- Assistant
- Partner
- Replacement

Requires aggressive, honest experimentation
- Dishonesty – French/Japanese/U.S.
- Inertia and “unions” – British and US
Implications

- Irregular war
- Conventional war
  - Examine each domain
Irregular War

Convergence favors non-state actors

- Less bureaucracy; less target discrimination
- Little infrastructure to protect

States at disadvantage

- All defenses based on ground or indirect fire attacks
- Key infrastructure and gatherings vulnerable
- Defense of logistics – civil and military

Powerful role for outside sponsors
Conventional – Ground Domain

- Defense becomes dominant
- Mass reappears
  - 10,000 dumb swarm is doable today
  - All signatures can be hit
  - Dispersed 20 foot containers/pods that can operate independently or as networks
Conventional – Sea Domain

- Small states and insurgents challenge navies
- Drones vs. ships for mission kills
- Underwater weapons – sink ships
  - Smart, self-deploying mines
- Weapons not platforms
  - Value of platform = Weapons delivered before out of action
US carriers out of action

USS Oriskany – 1966
5 months

USS Enterprise – 1966
51 days

USS Forrestal – 1967
9 months
Conventional – Air Domain

- Attack 4\textsuperscript{th}/5\textsuperscript{th} generation aircraft and key enablers (AWAC, KC-10) on the ground
- Strike logistics & C2 nodes
- Evolved cruise missiles and drones take over many missions?

Are manned aircraft range obsolete?
F-35A vs Missiles/Drones
Range in Nautical Miles
Conventional – Space Domain

- Everyone has access to space
  - Surveillance
  - Communications
  - Attack?

- Space domain substitutes
  - Drones
  - Balloons
Conventional – Cyber Domain

- Nodes vulnerable to precision strike
- Everyone lies
  - If succeed, don’t admit it
  - Claim success for others work
  - If penetrated, don’t admit
- Historical precedence
Conventional – Electromagnetic

Subset of Cyber for U.S.
- EMP drone

Russia –
- Ukraine – jam radios, control drones
- Syria – jam radios, drones (to include US)

China –
- SSF – Space, Cyber, EW
- Most closely guarded
Alternatives

- F-35: $100M, $65K per operating hour
- Kratos Drone: $2M

1 F-35 or 50 Kratos Drones

- CV: $20B with air wing
- Missile merchant w/50 missiles: $85 M

1 CV or 40 Missile Merchants

2000 Missile Cells
Crews: 1600 total
PLUS $15B for other things
Operational Implications

- Dominance in any domain much more difficult
- Cross domain attacks easier
- Power projection much more difficult
- Does tactical defense become dominant in land, sea, air domains?
Strategic Implications

- Geography favors the defense
- US alliances are fundamentally defensive = major advantage
  - Allies can buy if we lead
- Smaller states can deny major powers
- Lower cost; greater allied contribution
- Mass returns to the battlefield
Big Questions

- Does small, smart, many dominate the few and exquisite?
- Are we buying the wrong stuff?
- Plan for long wars?
- Implications for joint force?
Contact Information

txhhammes1@gmail.com