

MAKING THE  
**COMPLEX...**



**The Coming Counter-  
Revolution in Military  
Affairs**

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# The Coming Counterrevolution in Military Affairs

“You cannot qualify war in harsher terms than I will. War is cruelty, and you cannot refine it.”

– General William Tecumseh Sherman

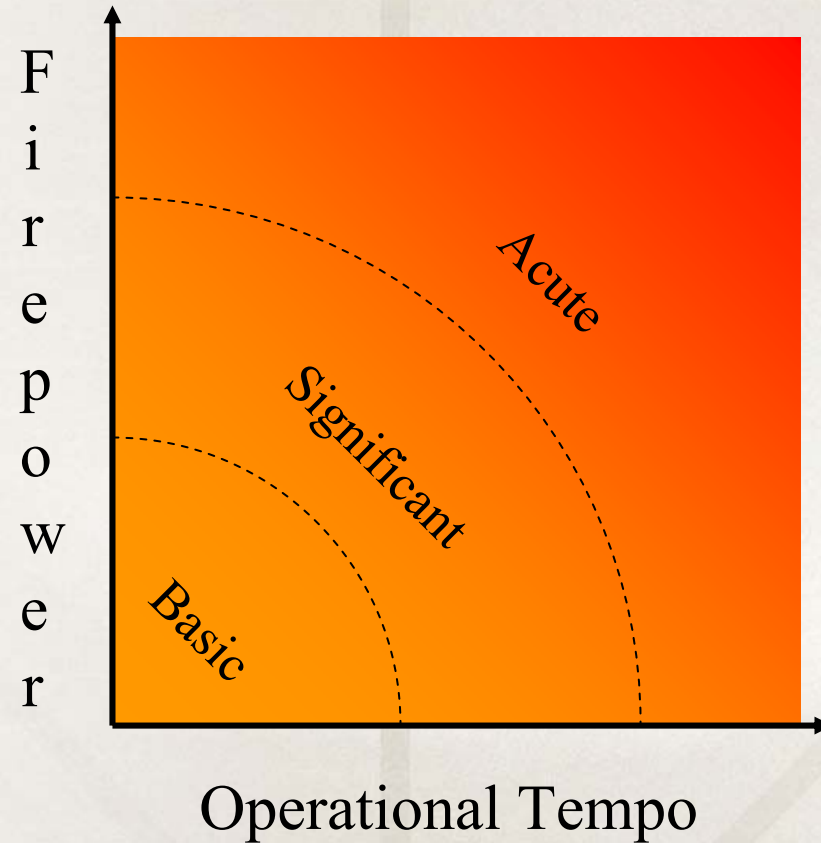
# The Coming Counterrevolution in Military Affairs

- **Trends in U.S. Warfare**
- **Toward a Revolution in Military Affairs**
- **The Potential Counterrevolution**
  - Deception
  - Disruption
  - Combination
  - Revolution
- **Identifying Potential Counterrevolutionaries**
- **Maintaining the U.S. Advantage**
- **Conclusions**

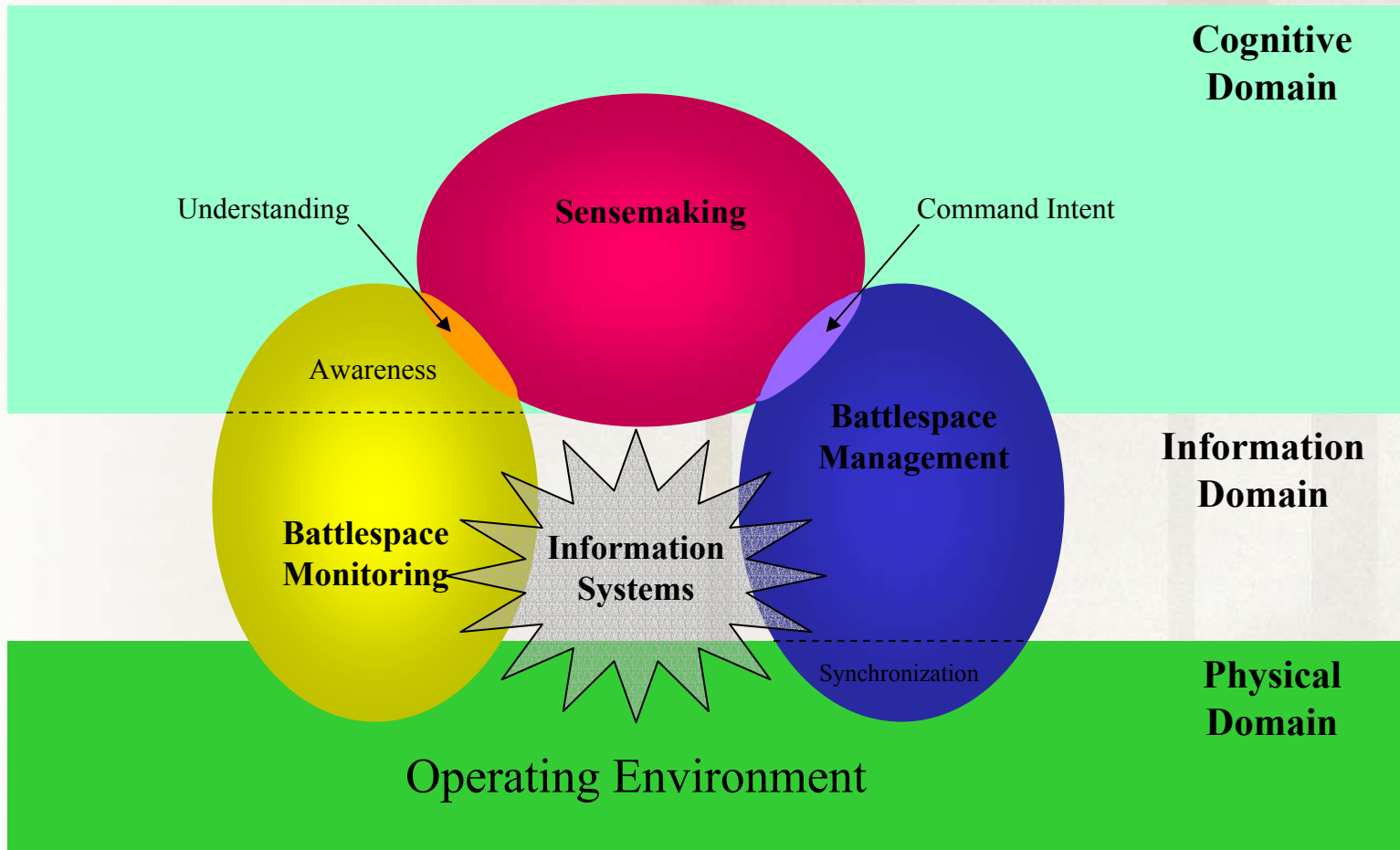
# Trends in U.S. Warfare

- **Long-Range Precision**
- **Information-Intensive Operations**
- **Network-Centric Warfare**
- **These:**
  - Maximize firepower
  - Increase tempo
  - Support continuous operations
  - Control Maneuver

# Increasing Need for Quality Information

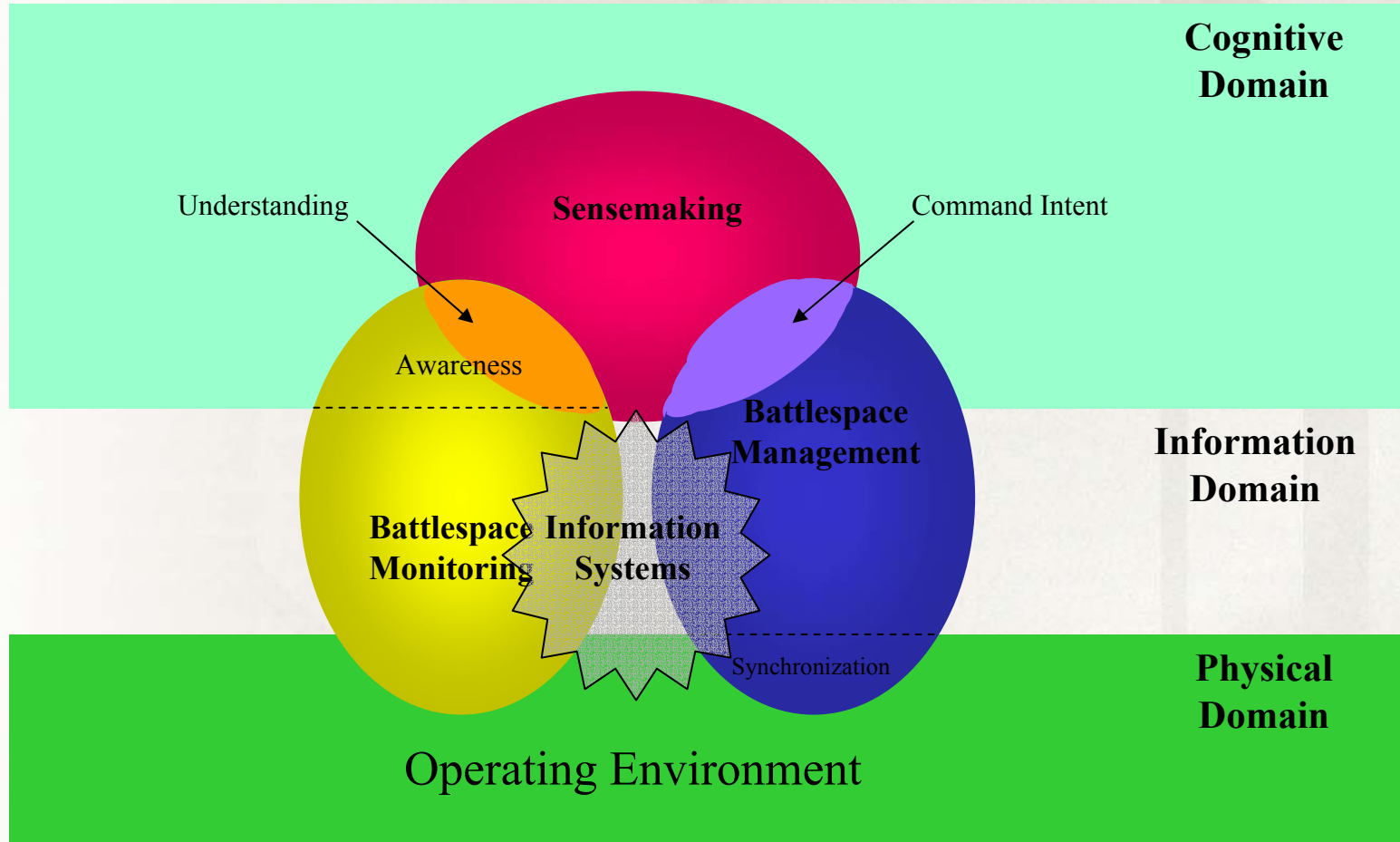


# Traditional C4ISR Process



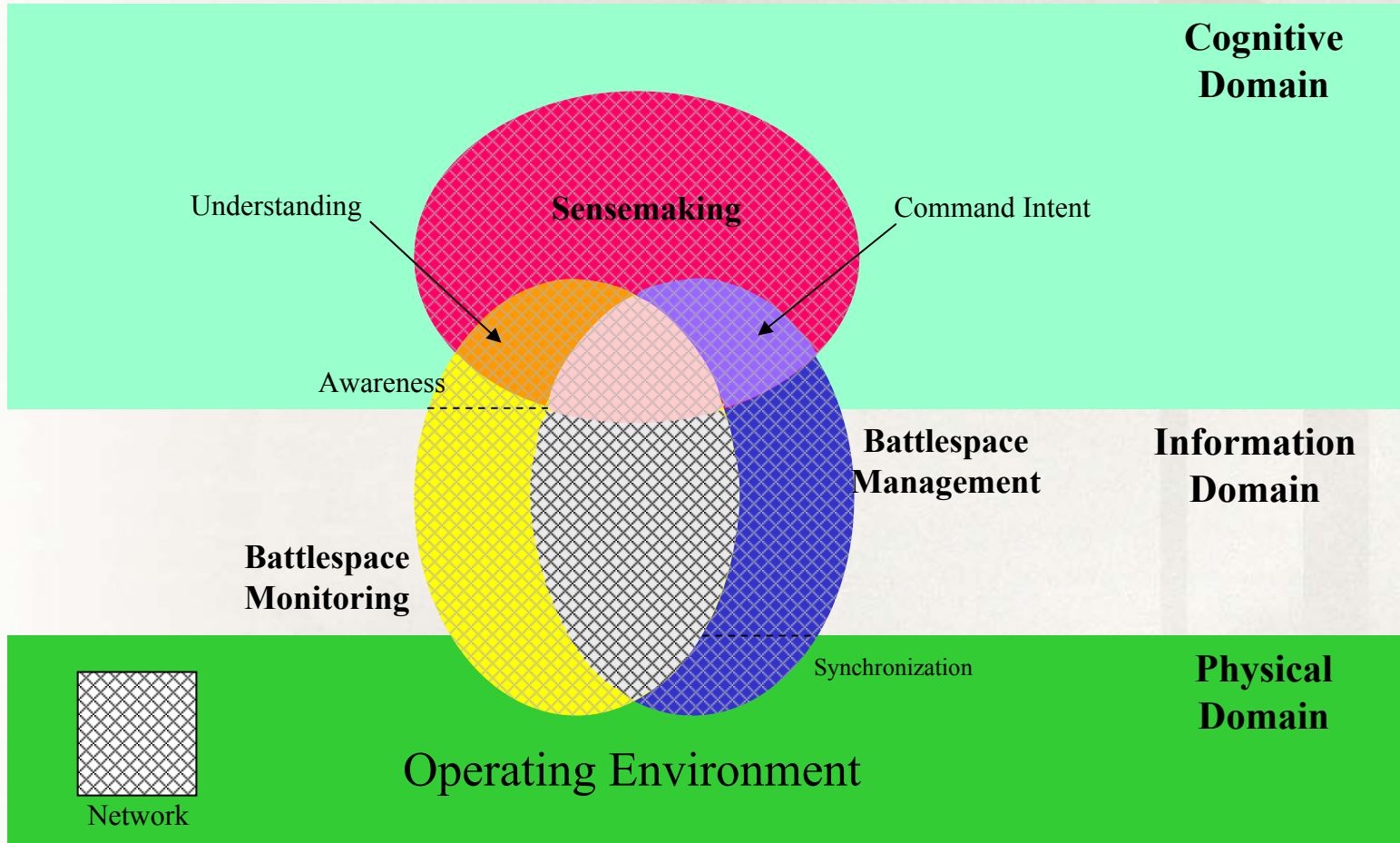
SOURCE: Alberts et al., *Understanding Information Age Warfare*, Figure 58

# C4ISR Process Today



SOURCE: Alberts et al., *Understanding Information Age Warfare*, Figure 59

# Greater Integration



SOURCE: Alberts et al., *Understanding Information Age Warfare*, Figure 60



# Toward a Revolution in Military Affairs

## ➤ Toward NCW

- Improved communications
- Increasingly networked

## ➤ Toward an RMA?

- enormous advantages
  - precision
  - ISR
  - tempo

## ➤ Toward universal political support

- Minimizing
  - friendly fire
  - civilian casualties
  - collateral damage

# The Coming Counterrevolution in Military Affairs

“War, however, is not the action of a living force upon a lifeless mass (total nonresistance would be no war at all) but always the collision of two living forces.”

– Carl Von Clausewitz



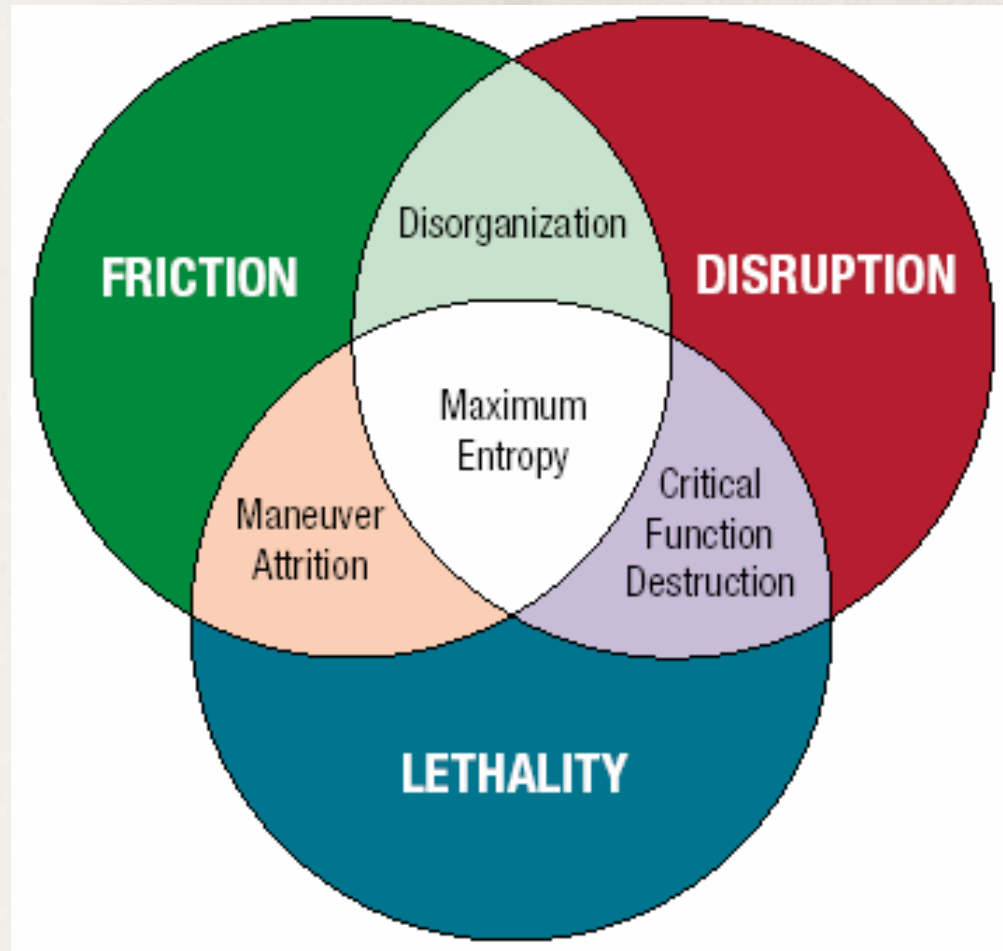
# The Potential Counterrevolution

- **Deception**
- **Disruption**
- **Combination**
- **Revolution**

- **Motivated by a desire to outlast the U.S. bombing campaign**
- **Can be simple**
  - Camouflage
  - Simple decoys
- **Can be more complicated**
  - Exposing a real target to surveillance and replacing it with a decoy for the warfighter to destroy
- **Why does it work?**
  - Long-range ISR is easily deceived
  - Tightened loop eliminates analysis
  - Combined with aggressive operations, this creates a significant vulnerability

- **Motivated by a desire to introduce entropy**
- **Can be simple**
  - Physical attacks
- **Can be more complicated**
  - Targeted attacks
  - Cyber attacks

# Entropy-Based Warfare



SOURCE: Herman, "Entropy-Based Warfare," *JFQ*, (No. 20): 87

# Disruption (*continued*)

- **Motivated by a desire to introduce entropy**
  
- **Can be simple**
  - Physical attacks
  
- **Can be more complicated**
  - Targeted attacks
  - Cyber attacks
  
- **Why does it work?**
  - Use of insecure back up
  - Complex systems fail unpredictably
  - For technical force, its information infrastructure may be its most logical center of gravity

- **Entropy can be accelerated by combining disruption and deception**
- **If the goal is to separate the commander from good information**
  - Taint the information
  - Make the information appear tainted
- **Poor quality decisions in high tempo operations involving lethal firepower can lead to several adverse outcomes**





## ➤ **Friendly fire, Collateral damage, Civilian deaths**

### ➤ **Examples**

- Afghanistan, 2002
- Canadian forces conducting a live-fire exercise
- Court martial
  
- Kosovo, 1999
- Albanian refugee convoy
- Halted bombing
  
- Iraq, 1991
- al Firdos bunker
- Halted bombing

# Adverse Outcomes and Military Outcomes

## ➤ **Hypersensitivity**

- U.S. military
- U.S. public
- International community

## ➤ **Recent wars have been wars of choice vice survival**

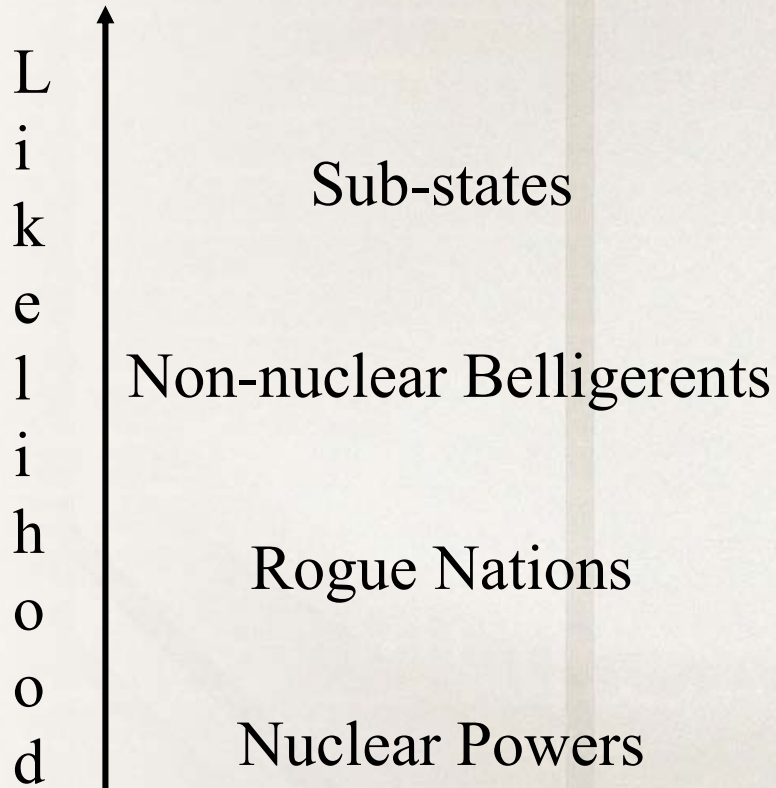
- The battle for public opinion is as much a condition of victory as killing the enemy

## ➤ **One adverse outcome can determine the strategic outcome**

- Somalia, 1993

- **Exploitation of this hypersensitivity is potentially the basis for a counter-RMA**
  
- **Beyond adaptation**
  - Just as France employed tanks in 1940, nations will use deception and disruption
  - Revolution is in the exchange of military goals
    - Tactics whose chief goal is to cause poor decisions
    - Operations meant to create specific adverse outcomes that would lead to friendly fire or collateral damage
    - Strategy meant to attack the domestic and international support for the entire campaign.

# Potential Revolutionaries



## Example: FARC

- **Revolutionary Armed Forces of Colombia; FARC**
- **18,000 fighters**
- **40 percent of the country**
- **\$300 million annual income from “taxation” of the drug trade**

## Example: FARC (continued)



SOURCE: BBC, Reuters

# FARC: cRMAer?

- **Aggressive target selection**
- **Innovative attack technique**
- **Technology fused in with operations**
- **Experience with international media**
- **Attacks infrastructure (including telecom)**



# Maintaining the Advantage

- **Better Use of Light Infantry**
- **Better Use of C4ISR**
- **Better Use of the Media**



# Better Use of Light Infantry

- **U.S. military's views towards ground forces remains very traditional**
  - Reluctant to use
- **Natural complement to long range ISR**
- **Natural complement to air power**
  - Prompt an enemy to
    - Dig in
    - Mass for counterattack
- **Need technology and doctrine to deploy in a fluid battlefield**

## The Military's Silicon Revolution

*By Cynthia L. Webb*

*washingtonpost.com Staff Writer*

**Thursday, March 6, 2003; 9:46 AM**

**washingtonpost.com**

## Audacious Mission, Awesome Risks

Bold War Plan Emphasizes Lightning Attacks and Complex Logistics

By Rick Atkinson and Thomas E. Ricks

Washington Post Foreign Service

Sunday, March 16, 2003; Page A01

**washingtonpost.com**

## Digitized Battle

High-Speed Data, Global: CAMP NEW JERSEY, Kuwait, March 15 -- With a force only one-third the size of the one that attacked Iraq have been given a far more ambitious mission: March hundreds of miles to Baghdad, and then prevent a country the size of California from disintegrating into chaos.

By Vernon Loeb

Washington Post Staff Writer

Monday, March 3, 2003; Page

CAMP DOHA, Kuwait -- In the Iraqi desert 100 miles north of here is Medina Ridge, site of a 1991 Gulf War battle in which U.S. forces destroyed more than 100 Iraqi tanks and armored personnel carriers in minutes from a mile and a half away, well

# Better Use of the Media

- **U.S. military has not invested heavily in interaction with the media**
- **Can help explain military operations, risk, and outcomes**
- **Can counter enemy propaganda**
- **Modern operations need**
  - informed journalists
  - media-savvy officers

# Conclusion

- **The effort to refine war is rooted deeply in the American character and should not be abandoned**
- **It should be used as a method of strengthening processes**

# Back ups

# What is IW? DoD's Answer

- **Information operations undertaken during a time of war.**
- **Information operations are actions taken to affect adversary information and information systems while defending one's own information and information systems.**

SOURCE: DoD, Joint Publication 1-02

# What is IW? Libicki's Answer

- **Command and control warfare**
- **Intelligence-based warfare**
- **Electronic warfare**
- **Psychological operations**
- **Hacker warfare**
- **Economic information warfare**
- **Cyberwarfare (combat in the virtual realm)**

SOURCE: Libicki, *What is Information Warfare?*, NDU, 1995.

# Is There Anything New?

- **C2 Warfare**
- **Advanced operational deception**
- **Strategic deception**
- **Manipulation of information**
- **Psychological warfare**
- **Indirect (economic) warfare**



# What is IW? French's Answer

- **Information Warfare is an attack on the information technology base of a military or nation.**
- **Non-military IT attacks are NOT information warfare**
  - Web page defacements
  - Self-replicating malicious code
  - On-line fraud and bank robbery
  - Computer-based espionage (economic, political, intelligence)
  - Psychological operations
  - Strategic deception, propaganda, and lying
- **Strategic Information Warfare is a nation-wide cyber attack on the U.S. information infrastructure designed to achieve the strategic goal of defeating the U.S. military or a long-term instability in the United States**

SOURCE: French, "Building a Deterrence Policy Against Strategic Information Warfare"



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## Example: FARC (continued)



SOURCE: BBC

## Example: FARC (continued)



SOURCE: Reuters

## Example: FARC (continued)



SOURCE: Reuters