

A Swift, Elusive Sword

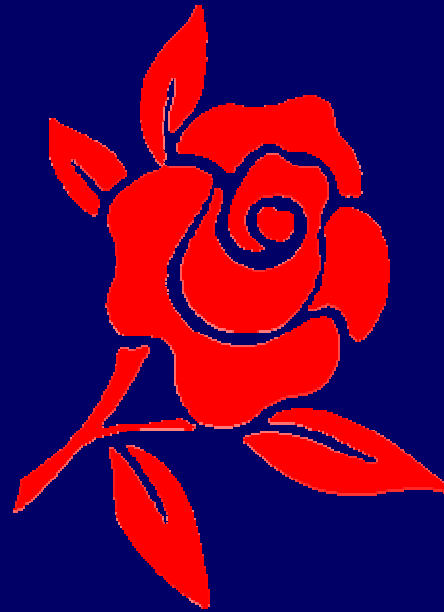
What if Sun Tzu and John Boyd
did a National Defense Review?

Dr. Chester W. Richards

Fall 2001 Boyd Conference

MCB Quantico, Virginia

As amended, April 2004



What is Maneuver Warfare?

Warfare directed towards destroying enemy cohesion as opposed to seizing real estate; at taking the enemy force out of play decisively instead of wearing him down through slow attrition; high tempo war; fluid war that has no defined fronts or formations; decentralized armies where troops act on their own with high initiative as opposed to centralized command structures where troops ask permission and wait for orders; war designed to place the enemy in a dilemma, to suck him in to traps of his own creation, taking advantage of his stupidities and weaknesses and avoiding his strengths; war where soldiers act on judgment not on rules; **war without rules**; war that seeks to penetrate the enemy rather than push opposing lines backwards and forwards; war waged by a cohesive team that is like a family or tribe with a common culture and common outlook; a willingness to fight close, not just applying firepower from a long standoff, but infiltrating when the opportunity arises, as did 1st. Marine Division in Desert Storm.

Colonel Mike Wyly, USMC, Ret.

Summary of John Boyd's Writings on 3rd Generation (Maneuver) Warfare

He never used either term.

Instead, he used the terminology on the next three charts.



Essence of Maneuver Conflict

Create, Exploit, and Magnify

- **Ambiguity:**
Alternative or competing impressions of events as they may or may not be.
- **Deception:**
An impression of events as they are not.
- **Novelty:**
Impressions associated with events/ideas that are unfamiliar or have not been experienced before.
- **Fast Transient Maneuvers:**
Irregular and rapid/abrupt shift from one maneuver event/state to another.
- **Effort (Cheng/Ch'i or Nebenpunkte/Schwerpunkt):**
An expenditure of energy or an irruption of violence—focused into, or thru, features that permit an organic whole to exist.

Payoff

- **Disorientation:**
Mismatch between events one observes or imagines and events (or efforts) he must react or adapt to.
- **Disruption:**
State of being split-apart, broken-up, or torn asunder.
- **Overload:**
A welter of threatening events/efforts beyond one's mental or physical capacity to adapt or endure.

Aim

Generate many non-cooperative centers of gravity, as well as disorient, disrupt, or overload those that adversary depends upon, **in order to magnify friction, shatter cohesion, produce paralysis, and bring about his collapse;**

or equivalently,

Uncover, create, and exploit many vulnerabilities and weaknesses, hence many opportunities, to pull adversary apart and isolate remnants for mop-up or absorption.

Essence of Attrition Warfare

Create and Exploit

- **Destructive Force:**
Weapons (mechanical, chemical, biological, nuclear, etc.) that kill, maim, and/or otherwise generate widespread destruction.
- **Protection:**
Ability to minimize the concentrated and explosive expression of destructive force by taking *cover* behind natural or manmade obstacles, by *dispersion* of people and resources, and by being *obscure* using camouflage, smoke, etc., together with cover and dispersion.
- **Mobility:**
Speed or rapidity to focus destructive force or move away from adversary's destructive focus.

Payoff

- Frightful and debilitating attrition via widespread destruction as basis to:
 - Break enemy's will to resist
 - Seize and hold terrain objectives

Aim

Compel enemy to surrender and sue for peace.

Essence of Moral Conflict

Negative Factors

- **Menace:**
Impressions of danger to one's well being and survival.
- **Uncertainty:**
Impressions, or atmosphere, generated by events that appear ambiguous, erratic, contradictory, unfamiliar, chaotic, etc.
- **Mistrust:**
Atmosphere of doubt and suspicion that loosens human bonds among members of an organic whole or between organic wholes.

Counterweights

- **Initiative:**
Internal drive to think and take action without being urged.
- **Adaptability:**
Power to adjust or change in order to cope with new or unforeseen circumstances.
- **Harmony:**
Interaction of apparently disconnected events or entities in a connected way.

Aim

Pump-up friction via negative factors **to breed fear, anxiety, and alienation** in order to generate many non-cooperative centers of gravity, as well as subvert those that adversary depends upon, thereby sever moral bonds that permit adversary to exist as an organic whole.

Simultaneously,


Build-up and play counterweights against negative factors to diminish internal friction, as well as surface courage, confidence, and esprit, thereby make possible the human interactions needed to create moral bonds that permit us, as an organic whole, to shape and adapt to change.

To Summarize

- To employ **maneuver conflict**, we use force within a fog of ambiguity and a web of deception to disrupt, disorient, and collapse an opponent.
- **Attrition warfare**, on the other hand, has a single tool - physical destructiveness - to batter the opponent into submission. Boyd never wrote that attrition warfare doesn't work, but the cost is often high and "widespread destruction" can sow the seeds of future conflict.
- The factors and counterweights of **moral conflict** apply to either.

Why a Fourth Generation?

Partial list of changes in the last 25 (+/-) years:

- 
- continued exponential increase in the world population
 - decline in standards of living in certain Third World countries
 - continuing international AIDS epidemic
 - rise of mega-cities (Jakarta, Cairo, Delhi, Mumbai, etc.)
 - increasing scarcity of arable land and water
 - explosion in drug trafficking, with associated money flows & corruption
 - fall of the Soviet Union and continued instability in the FSU
 - end of the bipolar world order and of the interpretation of events through a Cold War filter
 - ready availability of small arms and other inexpensive weapons
 - **resurgence of violent transnational ideological groups**
 - continued growth in wealth and influence of transnational corporations
 - emergence of US as the only conventional / economic superpower
 - growth of worldwide connectivity (CNN and the Internet, for example)
 - ease of global transportation (24 hours between any two points)

What Will the Fourth Generation Look Like?

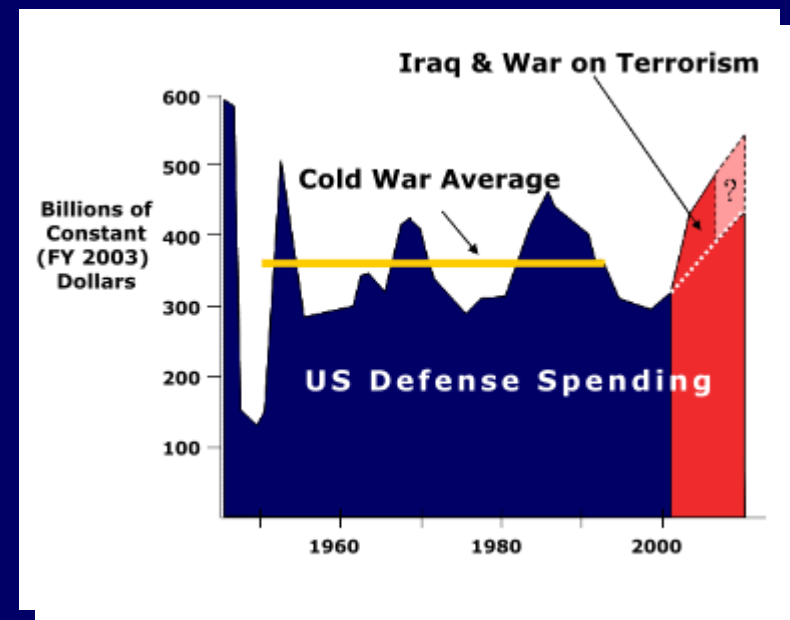
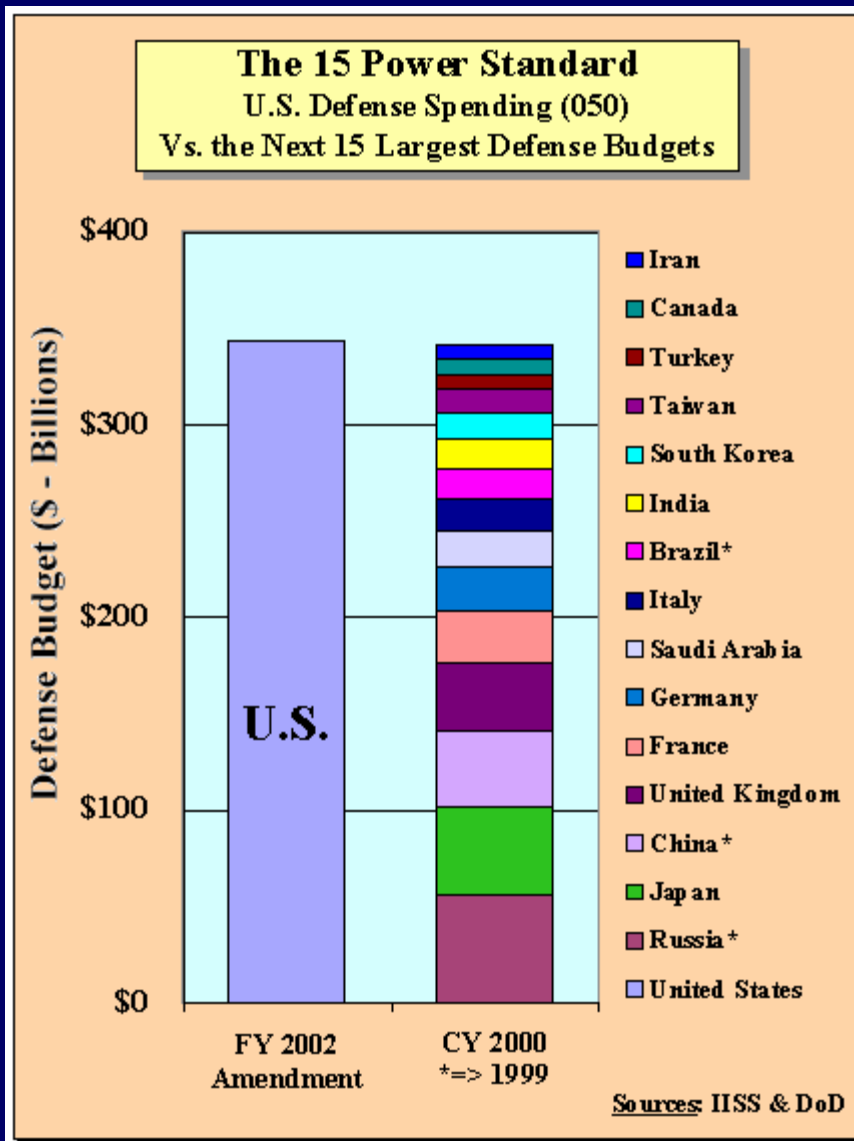
To get the answer:

- start with third generation warfare,
- ponder changes, e.g. from the previous chart,
- overlay the three “Categories of Conflicts,”
- let it all **evolve (networks are good at this)** – test occasionally, keep what works

Meanwhile, We're Locked In

As the conventional threat evaporates ...

defense spending continues to increase.



But Shouldn't We be Spending More, Now That There's a War On?

The WTC / Pentagon Attacks

Their costs	\$200,000
US DoD budget	\$325,000,000,000

Question: How much more do we need to spend to be safe?

Or, perhaps a focus on money is not the solution ... and may well be part of the problem.

A Way Out: Sun Tzu and John Boyd

Timeless strategy, based on the nature of conflict.

- Sun Tzu: c. 500 B.C.
- Col John Boyd, USAF: 1927 - 1997

Sun Tzu 101

- Early “Warring States Period” (453 – 211 B.C.): 18 states in central China, each at war with all the others
- Based on classical Taoism:
 - Harmony on the inside is *The Way*
 - Create confusion in minds of enemy
 - Goal: **Win** without fighting (i.e., but win)
 - If fighting becomes necessary, win quickly, with fewest casualties on each side.

Sun Tzu and Intelligence

- Foreknowledge is key
 - Cannot obtain from “ghost and spirits, analogy, calculation”
 - Only from people who know the conditions of the enemy
- Rewards for spies equal or exceed those for other members of the army
- Commander is own Director of Intelligence, not a passive “consumer”

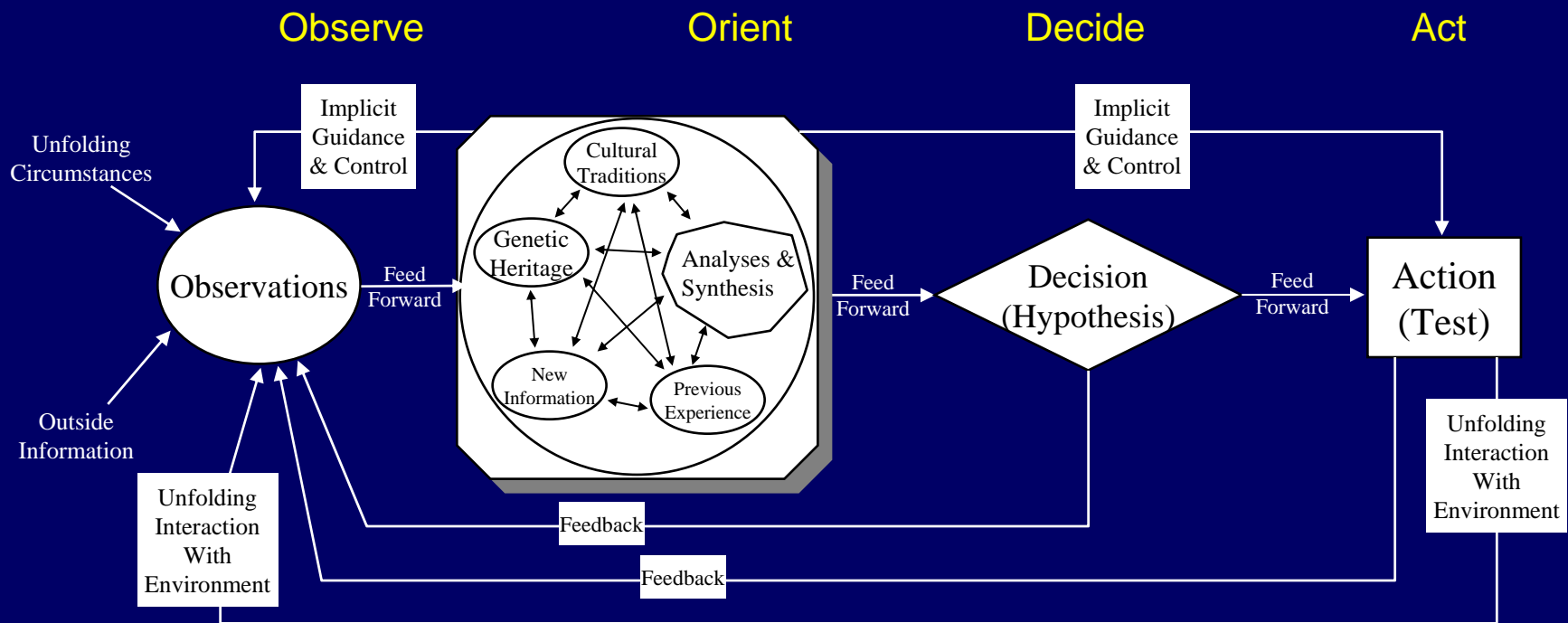
John Boyd

- Created “energy-maneuverability” to compare fighter aircraft in a mathematically valid way
- Discovered shortcoming; correction led to “agility”
 - Applies to more than just combat
- Emphasized: Manipulate **time** to create **ambiguity**
 - Milieu for surprise, deception, panic, etc.

The OODA “loop” is one way to use *time* as a weapon.

The OODA “Loop”

Sketch

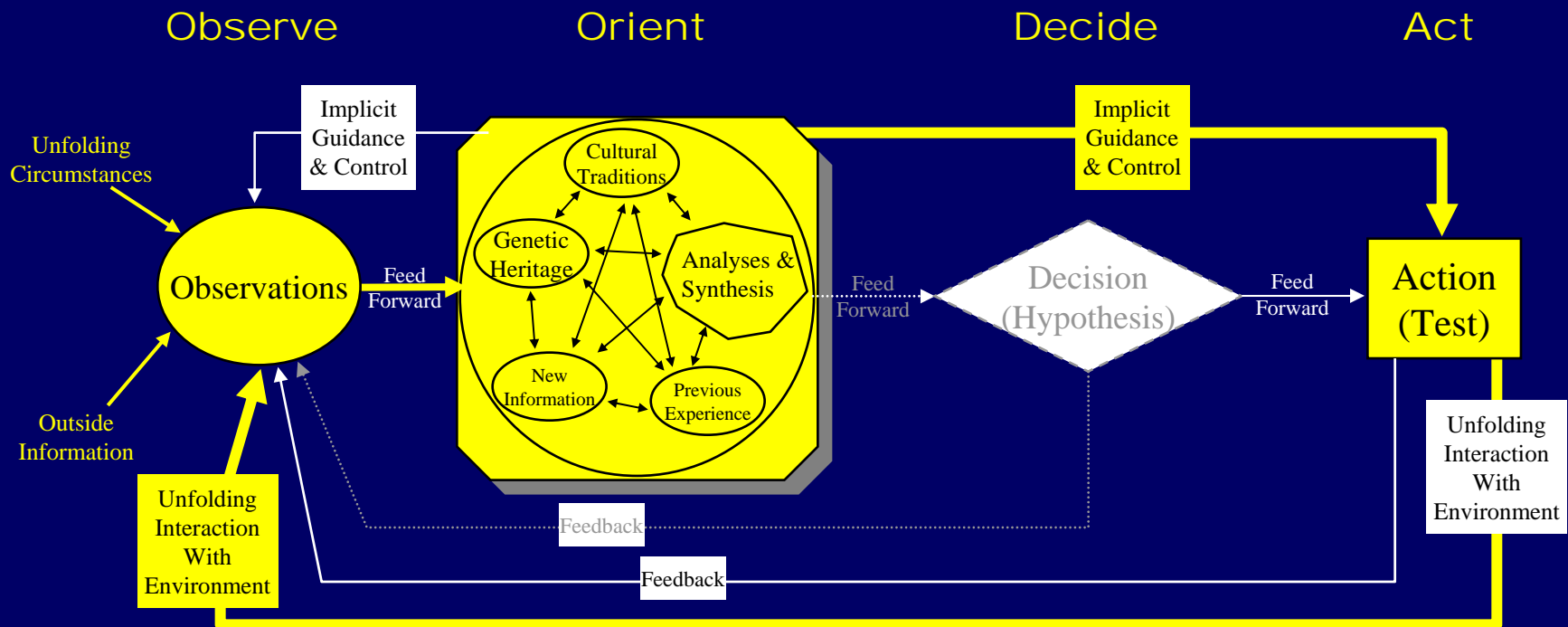


Note how orientation shapes observation, shapes decision, shapes action, and in turn is shaped by the feedback and other phenomena coming into our sensing or observing window.

Also note how the entire “loop” (not just orientation) is an ongoing many-sided implicit cross-referencing process of projection, empathy, correlation, and rejection.

“It’s like they’re moving in slow motion” —Boyd describing “operating inside opponents’ OODA loops.”

Pumping up OODA “Loop” Speed

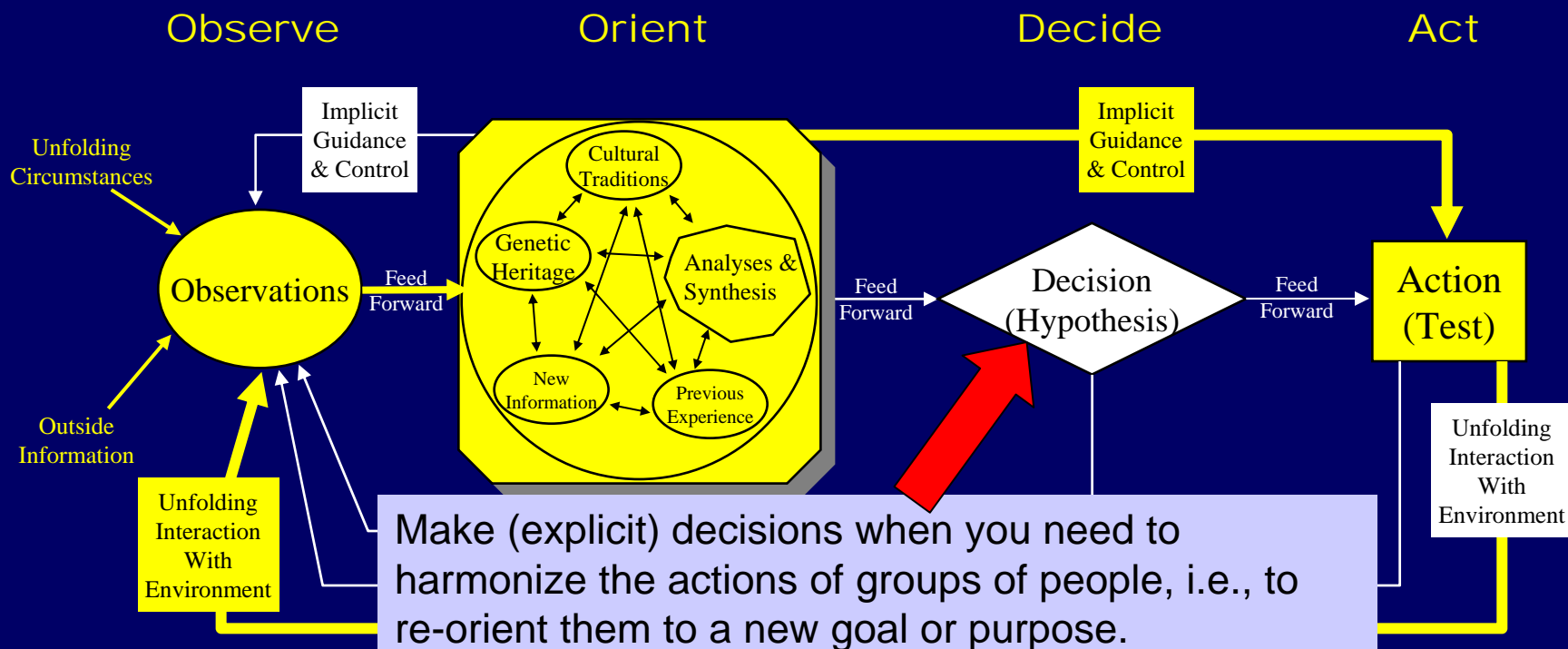


“Interaction permits vitality and growth, while isolation leads to decay and disintegration.” *Strategic Game*, 29.

“Orientation is the *Schwerpunkt*” *Organic Design*, 16

“Emphasize **implicit** over **explicit** in order to gain a favorable mismatch in friction and time.” *Organic Design*, 22

Sometimes, You Just Have to Make a Decision



Make (explicit) decisions when you need to harmonize the actions of groups of people, i.e., to re-orient them to a new goal or purpose.

However:

- Until they reorient, their actions will still be influenced by their implicit guidance and controls, and
- Decision making and reorientation always take time.

Boyd and Intelligence

- Closed systems die; must remain open
- Pull in information from all sources
- Because Observation is the only feed from outside world, any corruption will infect entire loop
 - Will not spot mismatches (until it is too late!)
- Commanders must take positive measures to ensure they are not being fed what staff thinks they want to hear

The Role of Military Force

The Aquarian Age is not yet
upon us.

Is There Still A Threat?

- Missile attack by weapons from FSU
- Missile attack by other states
- Another WMD attack by “rogue states, terrorists”
- Conventional engagements
 - Attack on “vital national interest”
 - Attack on state with US domestic support
- Fourth generation warfare (4GW) – evolving philosophy that uses guerilla warfare / LIC plus above tools plus ...

Using Military Force

- Sun Tzu
 1. Attack strategy
 2. Attack alliances
 3. Attack military forces
 4. Attack cities
- Boyd
 - Goal is survival on own terms
 - May result in conflict (e.g., for limited resources)
 - Worst case: must eliminate enemy

Unexpected Consequences of Military (Destructive) Activities

- Military force causes death and destruction & **always** breeds resentment
- In many conflicts, no clear “good / bad”

Therefore, military force must harmonize with the other elements of **grand strategy**:

- Diplomacy (“attack alliances”)
- Law enforcement (domestic and allied)
- Economics
- Adherence to US national ideals
- Other tools: Media, Peace Corps, daily interactions

Boyd's Grand Strategy

- Support national goals
- Pump up our resolve, drain away the adversary's resolve, and attract the uncommitted to our cause
- End the conflict on favorable terms
- Ensure that the conflict and peace terms do not provide the seeds for (unfavorable) future conflict

Need: “a unifying vision, via a grand ideal or an overarching theme or a noble philosophy”

What Makes a Military Force “Effective”?



Sun Tzu's Perspective

- Which ruler has the Way?
- Which commander is the more able?
 - Consider: intelligence, trustworthiness, bravery, humaneness, and sternness.
- Which army can better exploit the advantages of climate and terrain?
- Whose troops are the stronger?
- Whose discipline is more effective? In which army are regulations and instructions better carried out?
- Whose officers and soldiers are better trained?
- Whose system of rewards and punishments is clearer?

Boyd on Effectiveness

An “organizational climate for operational success”:

- Unity / mutual trust (*Einheit*)
- Intuitive competence (*Fingerspitzengefühl*)
- Mission orientation (*Auftragstaktik*)
- Focus and direction (*Schwerpunkt*)

Organizations that embody these 4 characteristics will be capable of operating inside their opponent’s OODA loops: “Internal simplicity that permits quick adaptability.”

Effective Forces Play the Cheng / Ch'i Game

- **Sun Tzu:** “Making armies able to take on opponents without being defeated is a matter of **unorthodox** (*ch'i*) and **orthodox** (*cheng*) methods ... give rise to each other like a beginning-less circle – who could exhaust them?”
- **Boyd:** “... to gain a feel for the ways the *cheng / ch'i* game has been (and can be) played.”
- Can be played on multiple levels, i.e., if opponent knows we like *cheng / ch'i*, we can exploit that fact also (Hitler at invasion of France, 1944)

Is Technology Irrelevant?

- No, but must fit into historical pattern:
 - People, ideas, technology in that order
- Integrate into this pattern by:
 - Robust and continual testing
 - Prototyping and experiment
 - Free play exercises
 - Rewards and incentives to find and fix problems
- At national level, close off *front loading, political engineering, revolving door* — legal but ethically marginal practices for influencing program decisions

Creating Forces

- Variety
- Rapidity
- Harmony
- Initiative

“ ... the key qualities that permit one to shape and adapt to an everchanging environment.” POC, 12

Primary indicator of success:



Ability to play the
cheng / ch'i game

“It’s like you’re commanding both sides.” — typical impression of a successful *cheng / ch'i* operation.

People Issues

- Pass a new Defense Officer Personnel Management Act.
 - Replace “up or out” with “up or stay” for O-3 and above.
 - Reduce the size of the officer corps in the land forces to 5 percent over 10 years.
 - Replace the “all or nothing” retirement system with a “Vest at 10, collect at 55” approach.
- Design the land forces structure around a regimental system (for cohesion).
 - Flatten the force structure, eliminating many HQs above brigade.
 - Integrate reserve and active components into each regiment.
- Empower leaders [compare: Boyd’s “mission concept,” derived from the German *Auftragstaktik*].
- Change the personnel management system.
 - Accessions and entry.
 - Education.
 - Decentralize management and promotion policies.

MAJ Don Vandergriff, *Revolution in Human Affairs*

The Officer Corps

- Base promotions only on demonstrated competence in free play exercise cycle or actual operations
- Reduce to <5%; increase responsibilities for NCOs, WOs, individual soldiers
- Most commissions through OCS after demonstrated performance in ranks
 - Service academy option after enlisted tour
- End credentialism!

An Evolutionary Force Structure



82nd ABN
SF, Ranger, Delta, etc.

1 Armor
1 Cav
1 Air Assault
5 Inf
1 Mtn

Various HQ & supporting Orgs
9 Inf
1 Armor in RC

Carriers
TACAIR
SEALs
SSN
SSBN
surface combatants, transports

3 USMC Divisions
1 USMCR Div
TACAIR

TACAIR:
F-15, F-16, F-117, A-10, A/MC-130
B-52H, B-1, B-2
Minuteman
Peacekeeper
C-5A/B
C-17
C-130, Helos, etc.

Strike Force

+ new littoral fire support, 4GW & maneuver warfare systems

Mobility Force

Strategic Force

82nd ABN
SF, Ranger,
Delta, etc.

1 Armor
1 Cav
1 Air
Assault
5 Inf
1 Mtn

Various HQ
& supporting
Orgs
9 Inf
1 Armor in
RC

Carriers
TACAIR
SSN
SSBN
surface
combatants,
transports,
etc.

3 USMC
Divisions
1 USMCR
Div
TACAIR

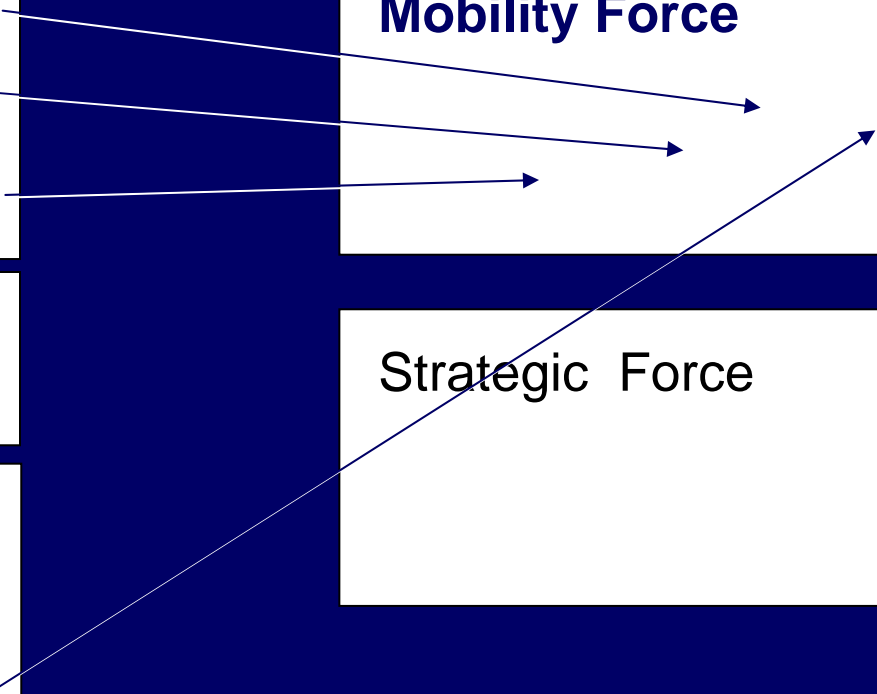
TACAIR: F-
15, F-16, F-
117, A-10
B-52H, B-1,
B-2
Minuteman
Peacekeeper
C-5A/B
C-17
C-130, Helos,
etc.

Strike Force

Mobility Force

+ enhanced inter-theater lift systems

Strategic Force



82nd ABN
SF, Ranger,
Delta, etc.

1 Armor
1 Cav
1 Air
Assault
5 Inf
1 Mtn

Various HQ
& supporting
Orgs
9 Inf
1 Armor in
RC

Carriers
TACAIR
SSN
SSBN
surface
combatants,
transports,
etc.

3 USMC
Divisions
1 USMCR
Div
TACAIR

TACAIR: F-
15, F-16, F-
117, A-10
**B-52H, B-1,
B-2**
**Minuteman
Peacekeeper**
C-5A/B
C-17
C-130, Helos,
etc.

Strike Force

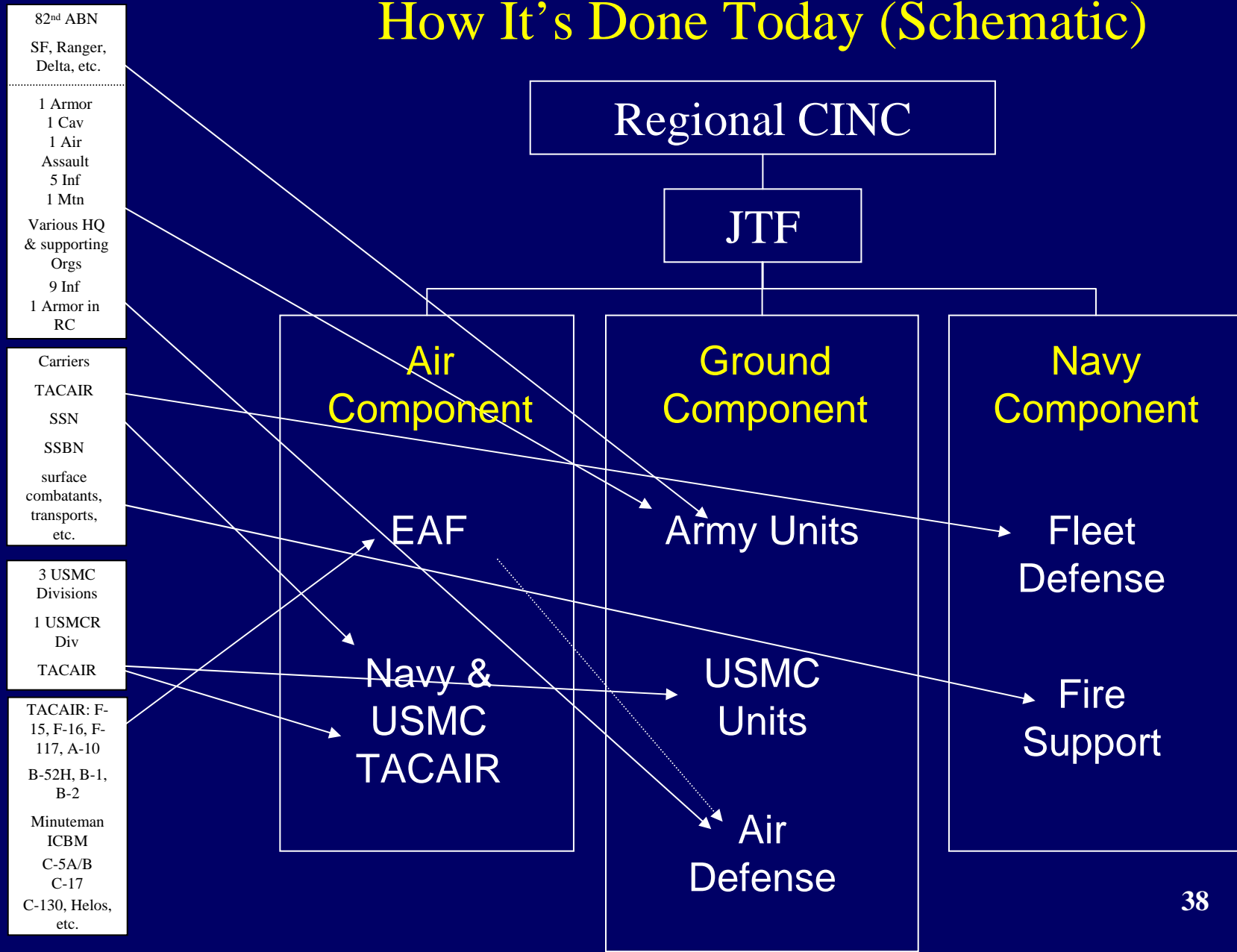
Mobility Force

Strategic Force

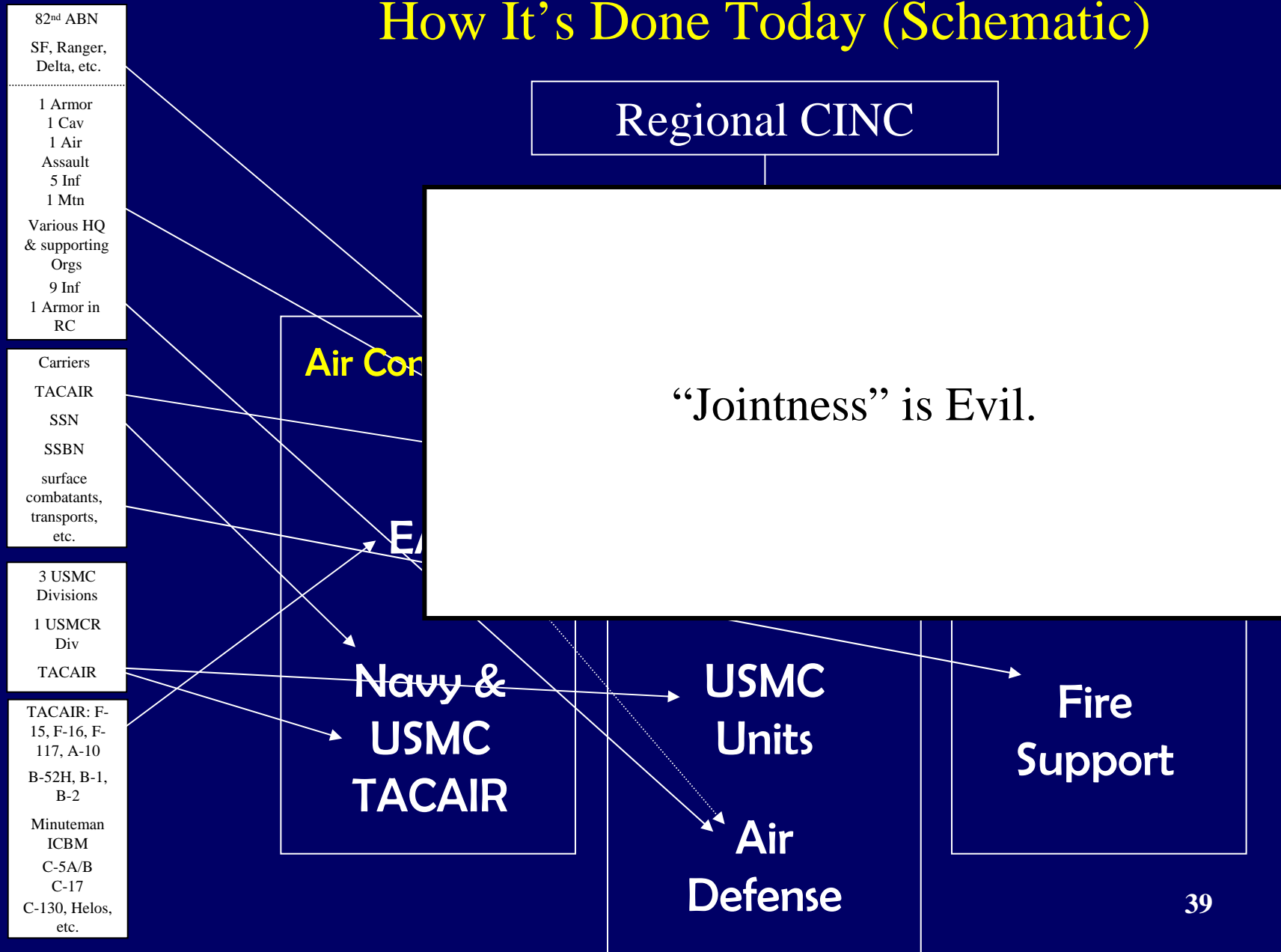
+ strategic
defense
systems*

*of any type, not necessarily
interceptors

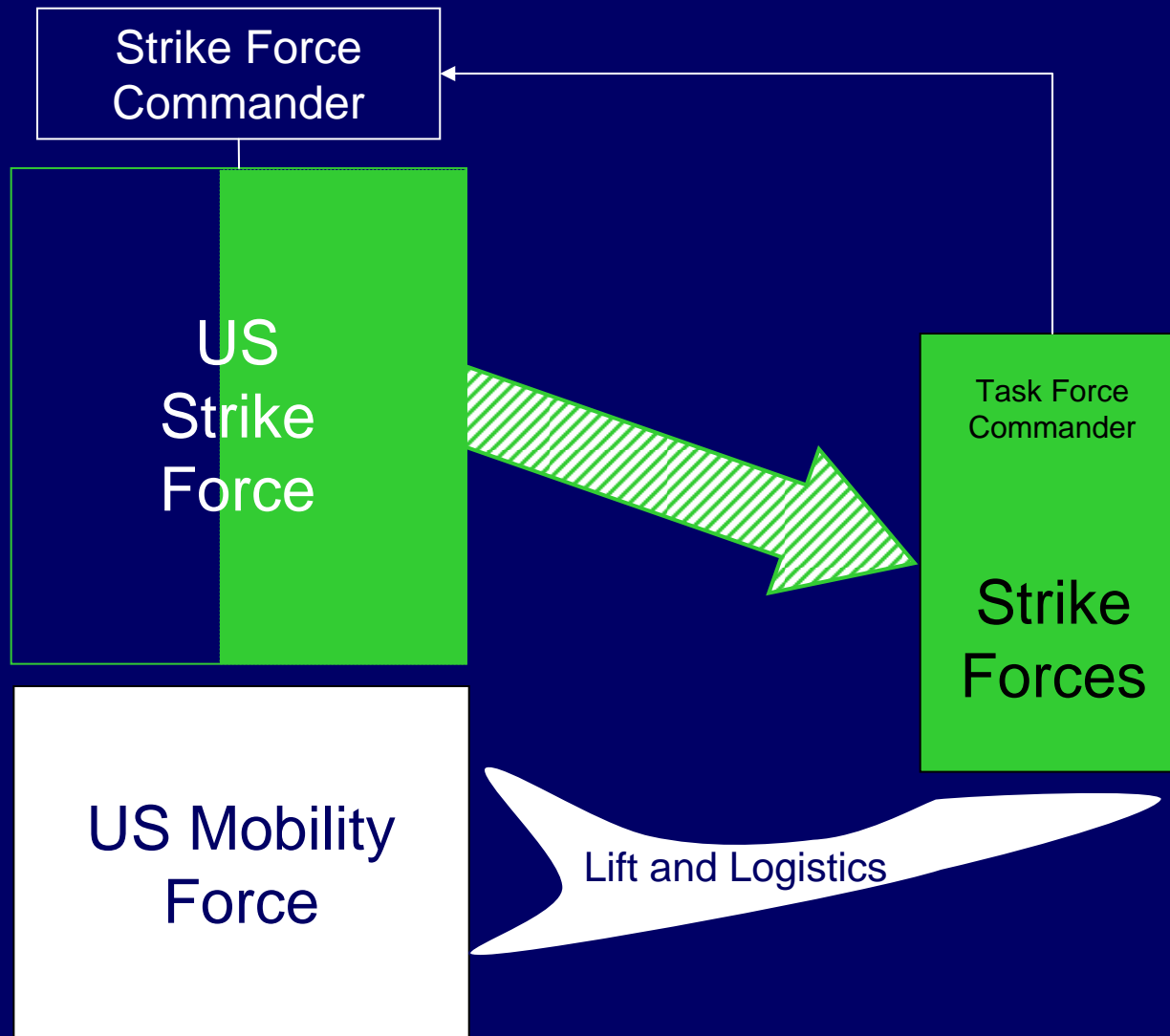
When Military Force is Necessary: How It's Done Today (Schematic)



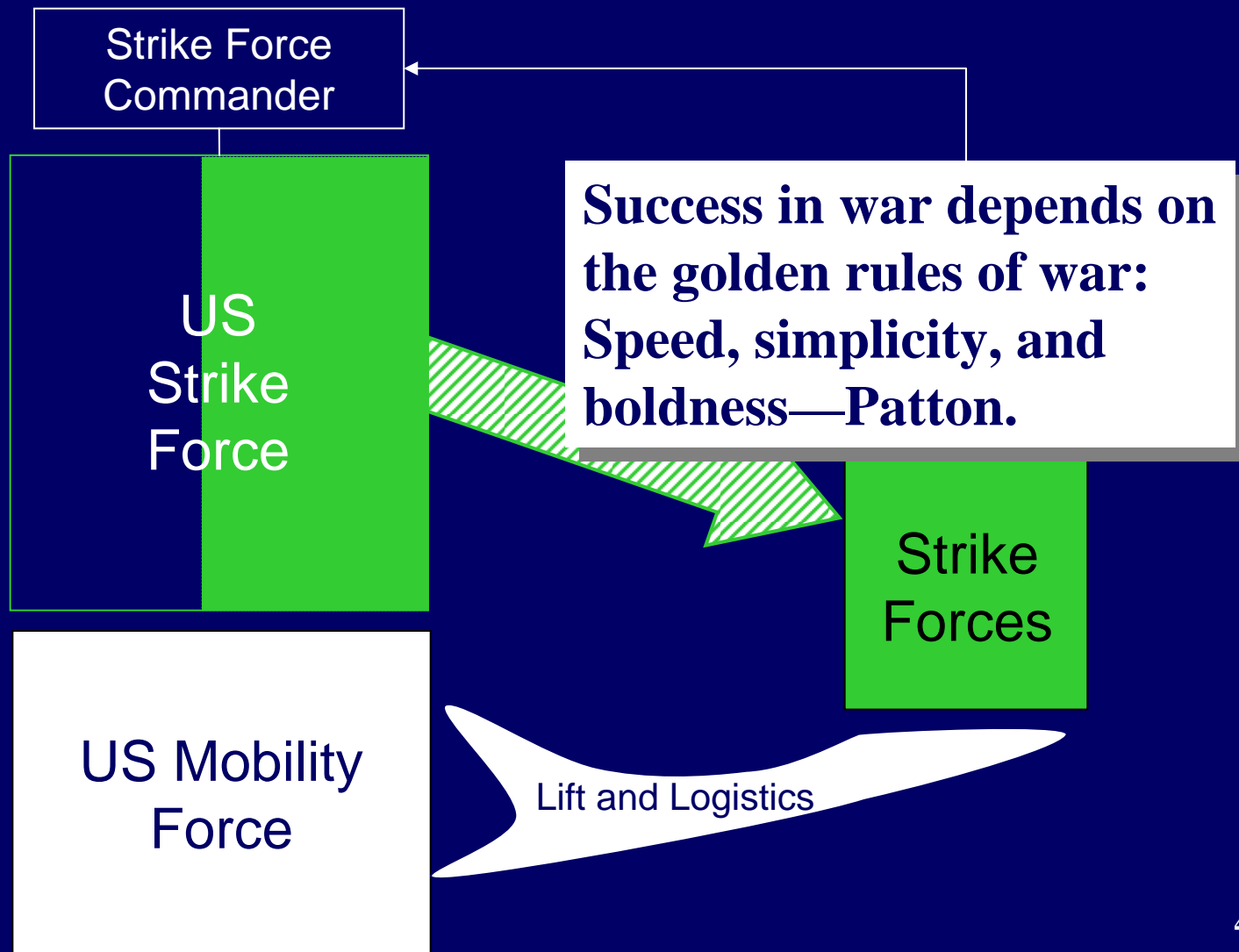
When Military Force is Necessary: How It's Done Today (Schematic)



When Military Force is Necessary: How It Could Be (Schematic)



When Military Force is Necessary: How It Could Be (Schematic)



Intelligence

- Always engaged (unlike combat forces)
- Career paths must equal combat forces'
 - Current highest intel officers are 3-star
- Open Source (OSINT) becoming more important
- “Technical means” in pretty good shape (SIGINT, ELINT, IMINT, etc.)
- Huge gap in HUMINT
 - Money not the only problem (inbreeding probably worse); long development time
- Competition is good, but covert operations belong to DoD

Application: National Missile Defense

- The mission is *not* NMD; it is to ensure that the US is not attacked (again) by any WMD
- Keep the initiative, *always play cheng / ch'i*
- Employ grand strategy to isolate states / groups suspected of developing WMDs; undercut their domestic and international support
- Keep all options open (deterrence, offensive operations, defense)
- Pump up intelligence directed against suspects
- Engage in selective covert/overt operations

Direct Threats to the US

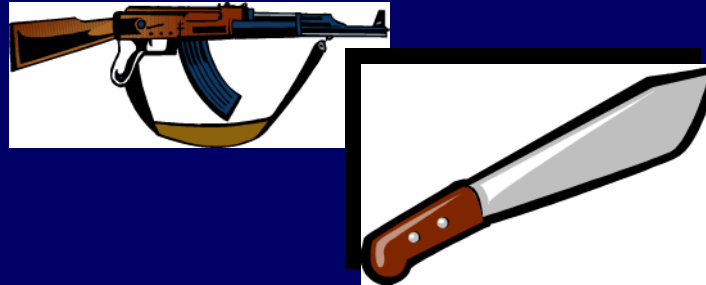
An Attacker's View

	Difficulty of Fielding an Operational Weapon	Cost	Effect on US Population
Nuclear Weapon Via:			
- ICBM	300	500	100
- Cruise Missile	30	30	100
- Aircraft	20	25	100
- Land Vehicle	20	20	100
"Poor Man's Nuke" & C/Bio	5-10	5	20-50
WTC/ Pentagon	1	1	1

Normalized to 1



Proven Weapons of Mass Destruction



Algeria – 1,000,000 (+100,000 since 1992)

Congo – 2,500,000 since 1998

Rwanda – 800,000 in 3 months

4GW does not have to be “low intensity”

Conclusions

- We **can** create forces that evolve with, as well as shape, maneuver & 4 GW
 - People are most important, followed by ideas, then hardware
 - Evolutionary Force shows what could be accomplished, at least as a starting point
 - People + ideas + selection mechanism (e.g., free play exercises, war) lead to evolutionary improvement