

# 18<sup>th</sup> International Command and Control Research and Technology Symposium

June 18-21, 2013 Alexandria, Virginia, USA

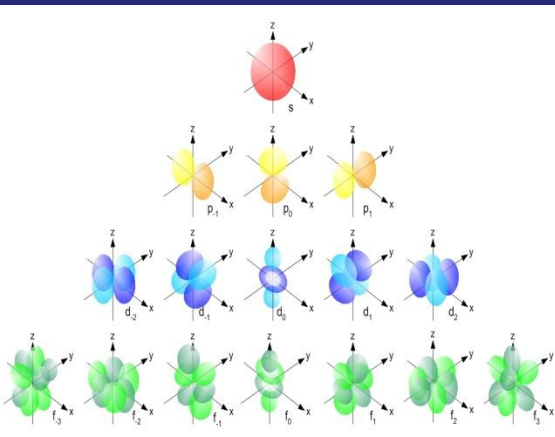
*C2 in  
Underdeveloped,  
Degraded  
and Denied  
Operational Environments*



## Track Two – Approaches and Organization

# Track Two – Approaches and Organization

## Preparing Capable Decision Makers for an Uncertain Future Within Underdeveloped, Degraded and Denied Operational Environments



**Russell E. Bryant**  
**PEO IWS**

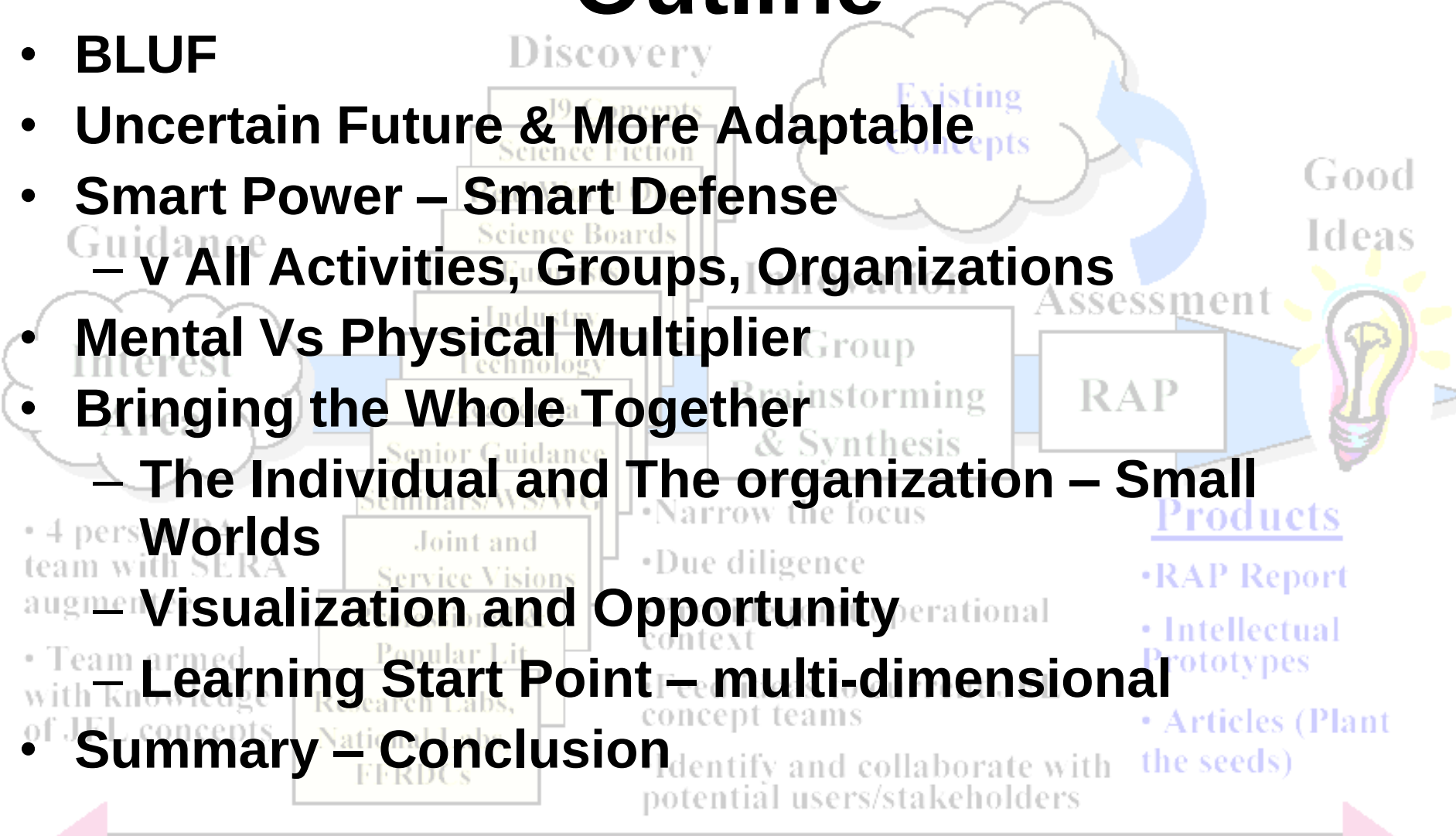


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# Focus Area Cycle

4 Phases: Discovery, Innovation, Assessment, Reporting

## Outline

- **BLUF**
  - **Uncertain Future & More Adaptable**
  - **Smart Power – Smart Defense**
    - v All Activities, Groups, Organizations
  - **Mental Vs Physical Multiplier**
  - **Bringing the Whole Together**
    - The Individual and The organization – Small Worlds
    - Visualization and Opportunity
    - Learning Start Point – multi-dimensional
  - **Summary – Conclusion**
- 
- The diagram illustrates the 'Focus Area Cycle' with four main phases: Discovery, Innovation, Assessment, and Reporting. It shows a flow from 'Existing Concepts' (in a cloud) through 'Brainstorming & Synthesis' (in a box) to 'RAP' (in a box) and finally to 'Products' (in a box). A lightbulb icon labeled 'Good Ideas' is shown next to the 'Products' box. The 'Discovery' phase includes 'Science Fiction', 'Science Boards', 'Industry', and 'Senior Guidance'. The 'Innovation' phase includes 'Brainstorming & Synthesis'. The 'Assessment' phase includes 'RAP'. The 'Reporting' phase includes 'Products'. The 'Products' box lists: '• RAP Report', '• Intellectual Prototypes', and '• Articles (Plant the seeds)'. The 'Brainstorming & Synthesis' box lists: '• Narrow the focus' and '• Due diligence'. The 'Discovery' phase lists: '• 4 persons team with SEKA augmented reality' and '• Team armed with knowledge of JEL concepts'. The 'Innovation' phase lists: '• Identify and collaborate with potential users/stakeholders'. The 'Assessment' phase lists: '• Feedback from concept teams'. The 'Reporting' phase lists: '• Feedback from operational context'. The 'Products' phase lists: '• Feedback from operational context'. The 'Brainstorming & Synthesis' phase lists: '• Feedback from operational context'. The 'Discovery' phase lists: '• Feedback from operational context'. The 'Innovation' phase lists: '• Feedback from operational context'. The 'Assessment' phase lists: '• Feedback from operational context'. The 'Reporting' phase lists: '• Feedback from operational context'.

**Alternate Views – Graham Allison – Changed Dimensions – Changed Parameters**

# BLUF - Summary

- **Uncertainty will continue**
  - Mitigate via Knowledge & Understanding
- **Change the reference frame**
  - Different patterns can emerge
- **More dimensions**
  - New correlations – new influence paths
  - Different views of data
    - ➔ Improved context for Knowledge & Understanding
    - ➔ Decision Style depends on maker(s) and receiver(s)
- **Learning & Development**
  - Starts early - Continues

# Uncertain Future - More Adaptable

“Boyd explained . . . **material elements** come in a poor **third** in deciding which side wins conflict – **after moral and mental factors.**” Likewise, he notes that Napoleon said, “**the moral is to the physical as three to one.**” Wheeler - 2012

**uncertain:** 1: indefinite, indeterminate; 2: not certain to occur; 3: not reliable; 4 *a*: not known beyond doubt, *b*: not having certain knowledge, *c*: not clearly identified or defined; and, 5: not constant: variable, fitful. Merriam-Webster

**adaptable:** capable of being or becoming adapted – adapt·abil·i·ty; and its synonyms are: **versatile, all-around (also all-round), protean, universal.** Merriam-Webster

## More Tools – Knowledge – Experiences - Dimensions

‘that when all the logical possibilities have been ruled out, it is time to examine the illogical possibilities . . .’ Mr. Spock – Star Trek



# Teamwork – More Dimensions

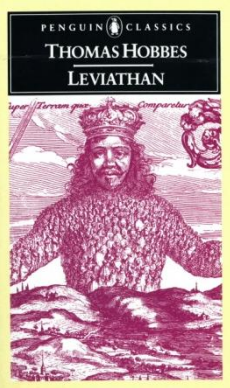
- DoS Quote:

Partnerships “**Person-to-person diplomacy** in today’s world is as important as what we do in official meetings in national capitals across the globe. It can’t be achieved, though, just by our government asserting it. It can **only be achieved by the kind of public-private partnerships** that the United States is uniquely known for...**people and groups working across sectors, industries; working together with persistence and creativity to fulfill that promise of a new beginning and translate it into positive benefits.**” – *Secretary Clinton, September 2010* [Italics in original]

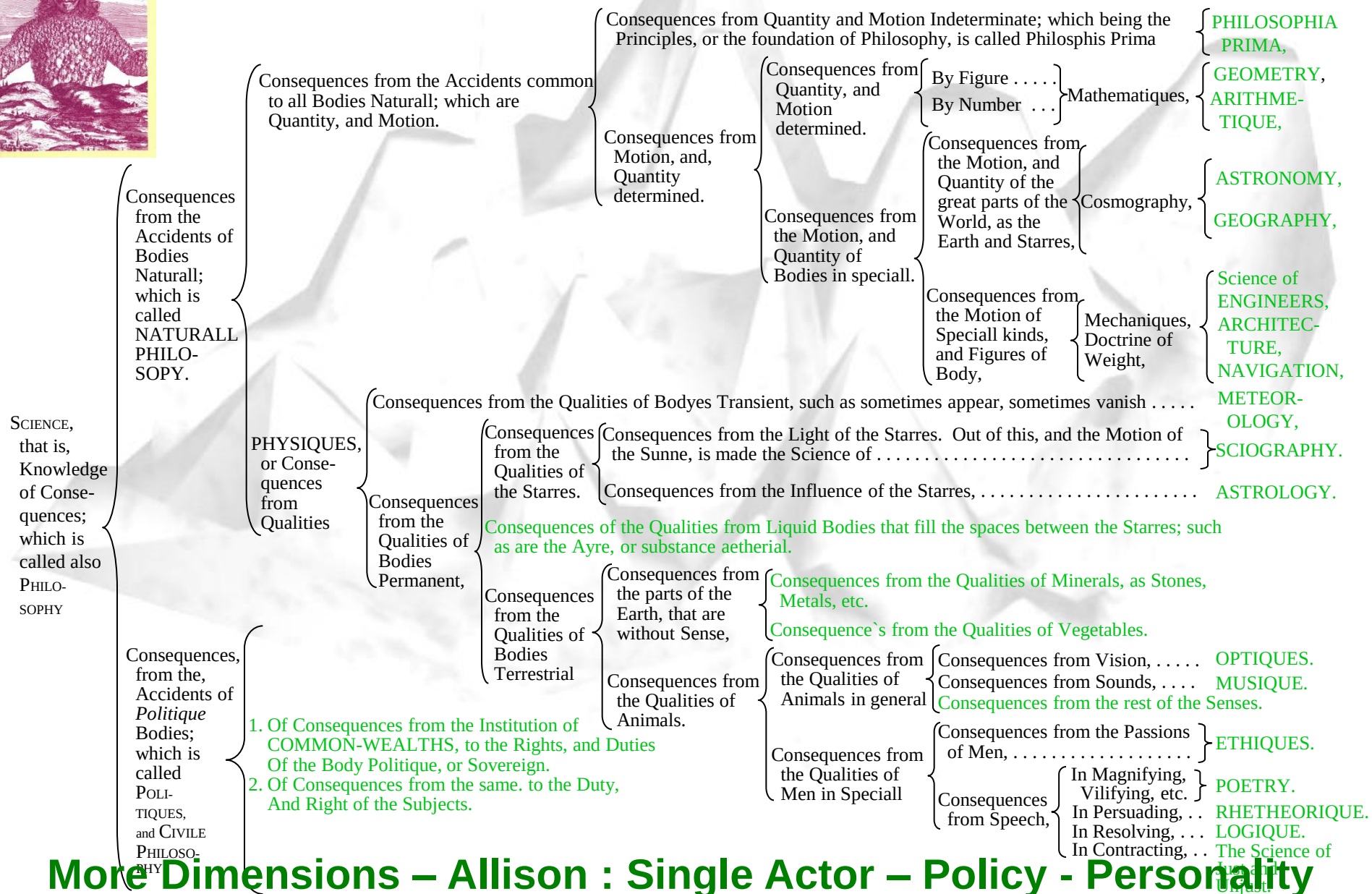
- State of New Jersey Experience:

Specifically, while discussing New Jersey coordination and changes since 2001, Clark noted: The **New Jersey state police and emergency management** professionals now **coordinate with Federal agencies including the FBI, Coast Guard, Federal Air Marshal Service, U.S. Immigration and Customs Enforcement, National Guard, and the Bureau of Alcohol, Tobacco, Firearms and Explosives.** “If only more agencies looked for ways to use resources for multiple purposes,” (Thomas) O’Reilly says.” (Clark, 2013)

**‘Extended’ Individual/Team Organization = Multiple Mental Options**  
**➔ Versatile, All-round View Opportunities**

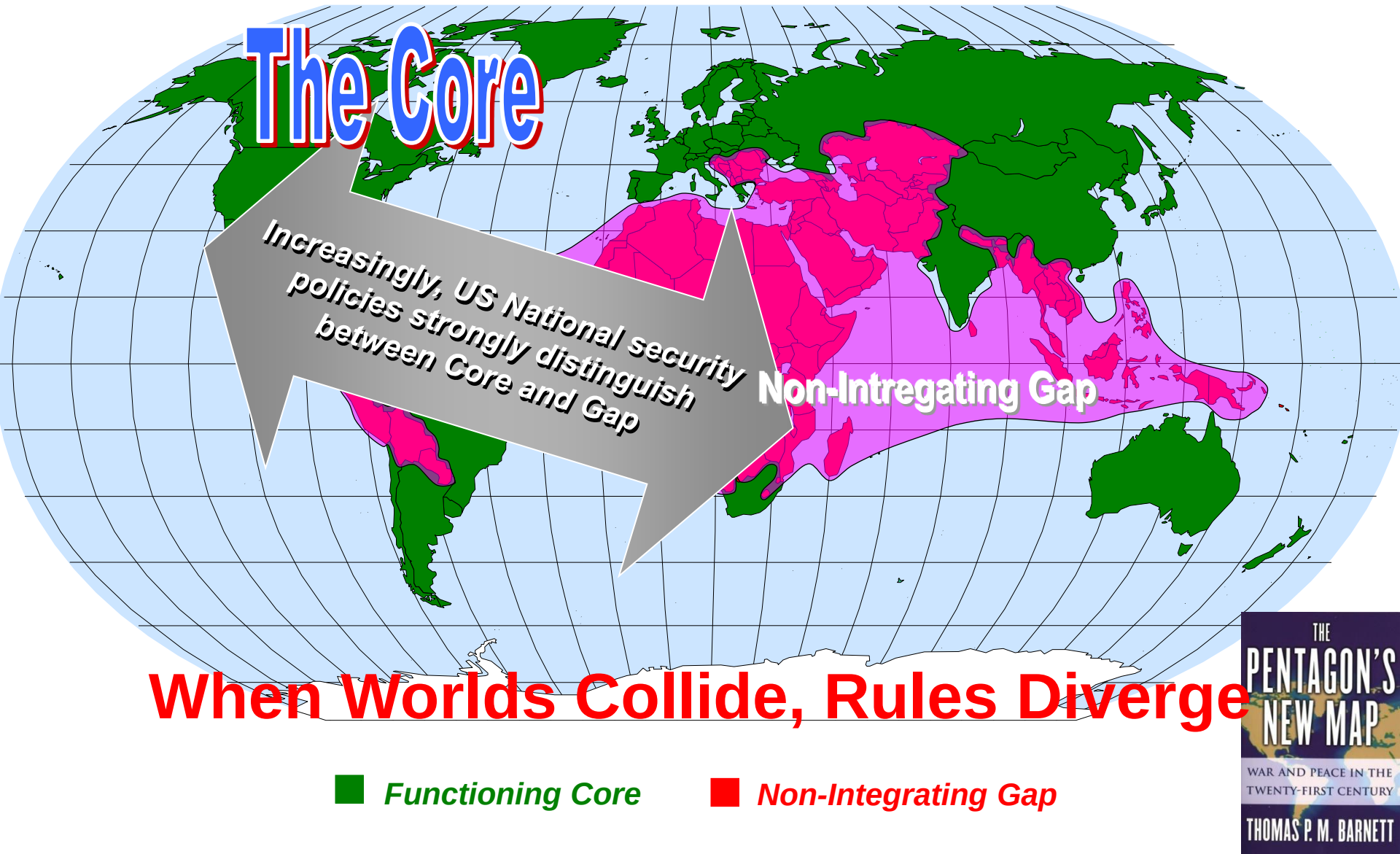


# BROAD-BASED EDUCATION – T. HOBBS' PHILOSOPHIES

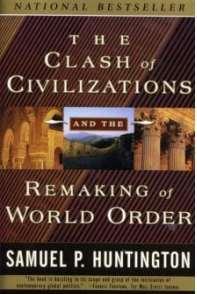


More Dimensions – Allison : Single Actor – Policy - Personality

# The Connected and Unconnected Groups

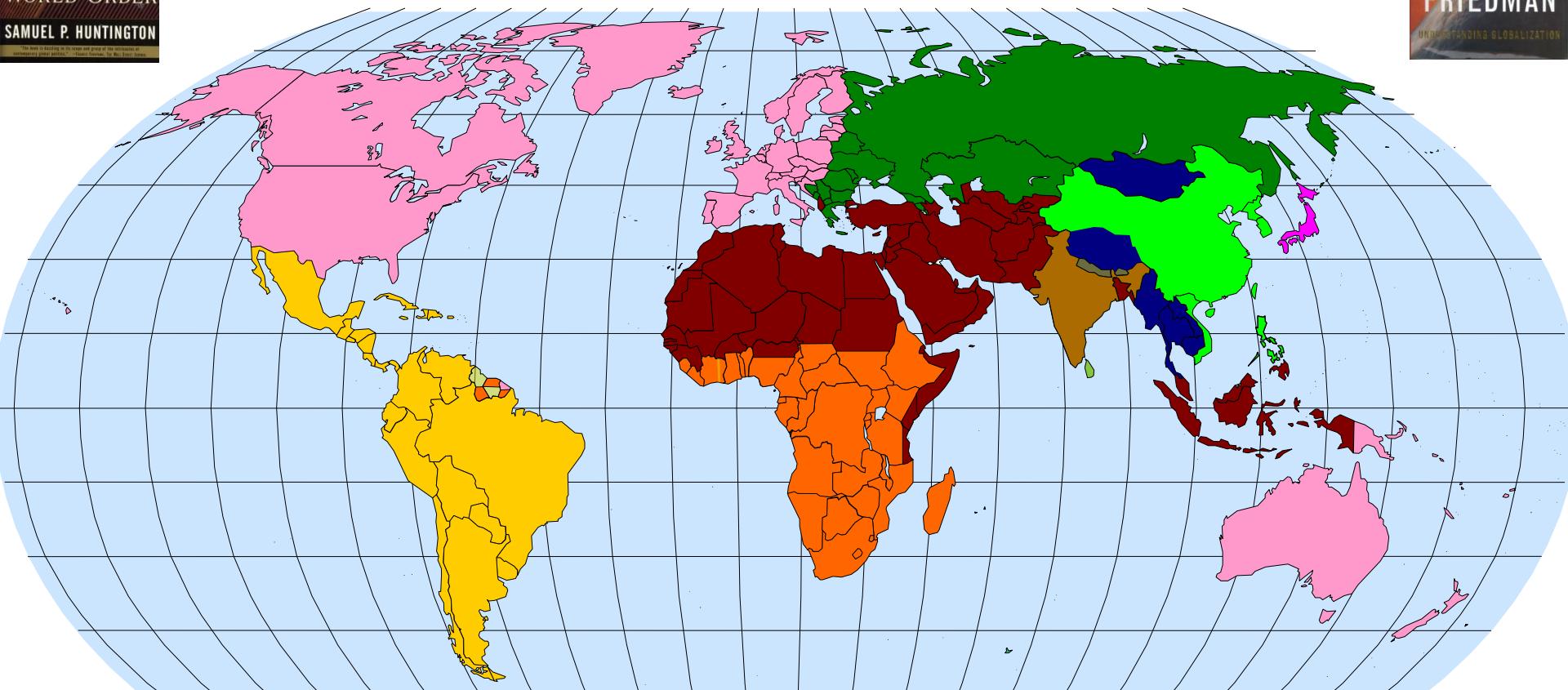
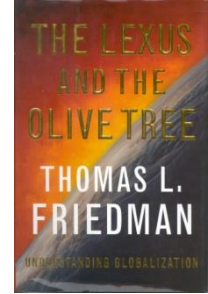






# The World of Civilizations: Post-1990

(S. P. Huntington)

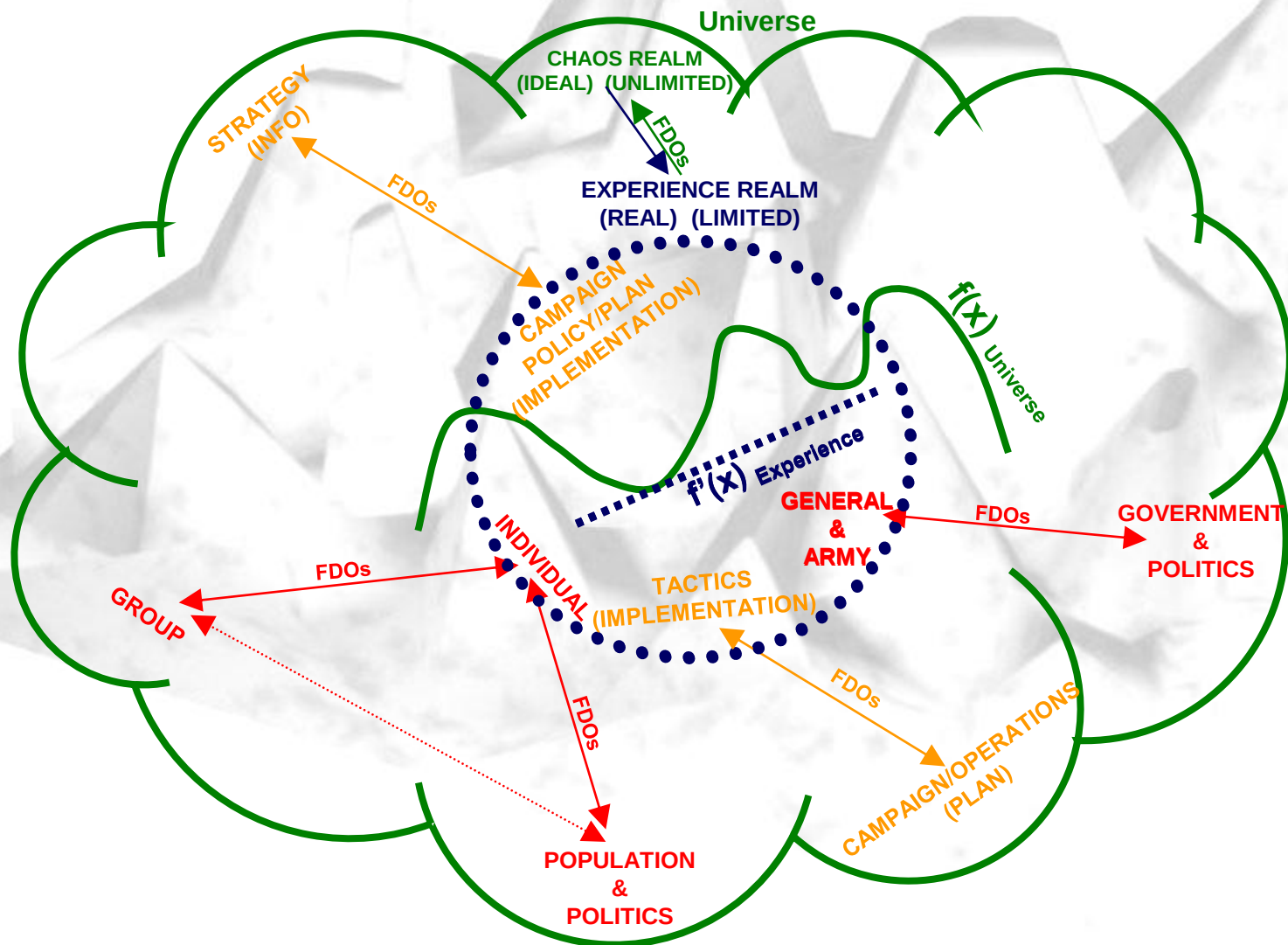


Like Graham Allison – Must examine with Different Models  
Changes the parameters, dimensions – Reveals Differing Relationships

|                                                                                                           |                                                                                                    |                                                                                                       |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  <b>Western</b>        |  <b>Islamic</b> |  <b>Orthodox</b> |
|  <b>Latin American</b> |  <b>Sinic</b>   |  <b>Buddhist</b> |
|  <b>African</b>        |  <b>Hindu</b>   |  <b>Japanese</b> |

# MODEL a la CLAUSEWITZ

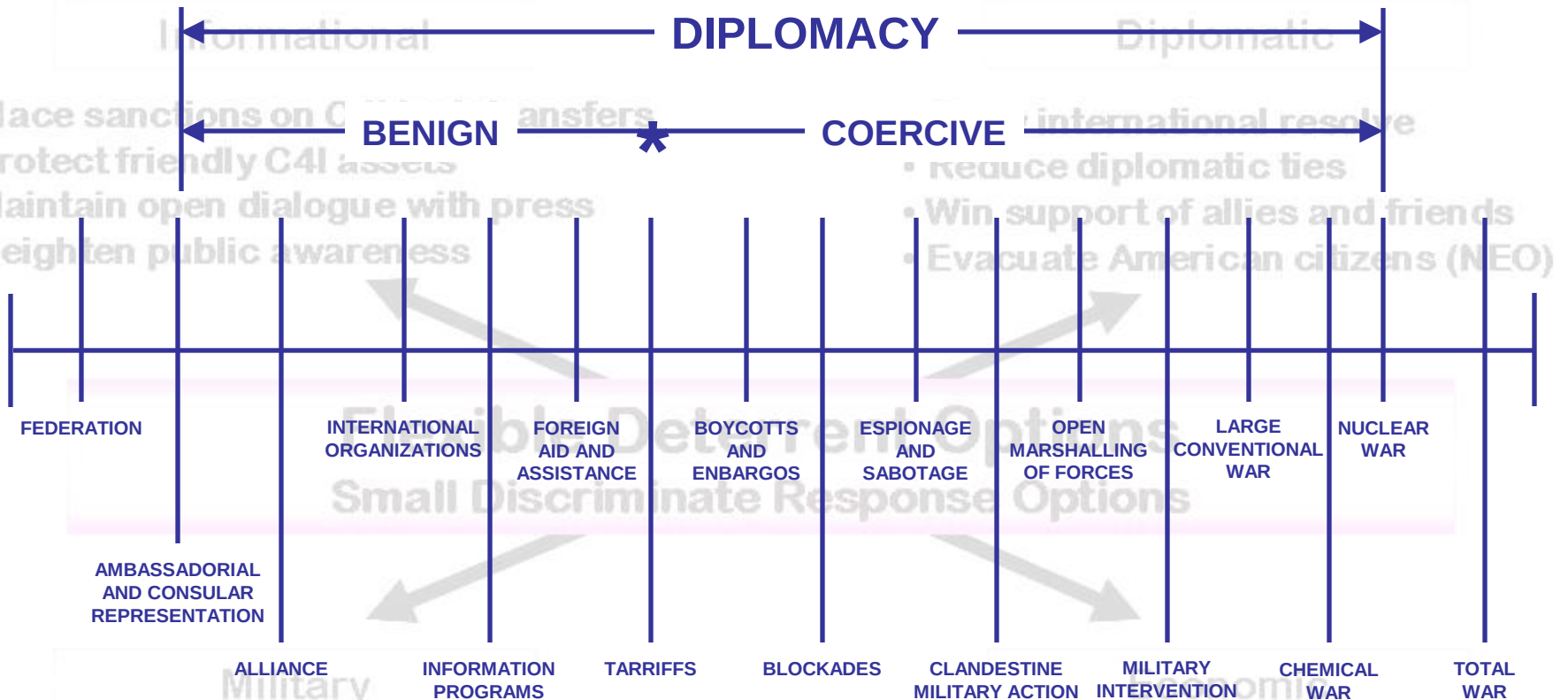
## UNLIMITED WAR vs LIMITED WAR



$f'(x)_{\text{Experience}}$  – Newton – 3 dimension

$f(x)_{\text{Universe}}$  – Quantum – n dimension

# FLEXIBLE DETERRENCE OPTIONS – SPECTRUM OF TOOLS FOR NATIONAL SECURITY POLICY IMPLEMENTATION



“WAR IS MERELY THE CONTINUATION OF POLICY BY OTHER MEANS” – CLAUSEWITZ

## Over Lapped FDO Dimensions

# FDOs – Tailored Responses

## Informational

- Place sanctions on C4I tech transfers
- Protect friendly C4I assets
- Maintain open dialogue with press
- Heighten public awareness

## Diplomatic

- Show international resolve
- Reduce diplomatic ties
- Win support of allies and friends
- Evacuate American citizens (NEO)

## Flexible Deterrent Options Small Discriminate Response Options

## Military

- Increase reconnaissance collection
- Activate procedures to begin reserve callup
- Initiate show of force actions
- Exercise pre-positioned equipment
- Deploy CVBG or SAG to the region

## Economic

- Discontinue assistance programs
- Freeze international assets
- Enact trade sanctions
- Restrict corporate transactions
- Seize real property in the US

**Opportunity: 4-Dimensions ➔ + Radar Graphs**

# Smart = Soft + Hard : Power (Mental Vs Physical Multiplier)

Searching Here Now

New Competitive

Advantage Could Lie Here

“international relations, the term ‘**smart power**’ refers to the **combination** of **hard power** and **soft power** strategies. It is defined by the Center for Strategic and International Studies as “an approach that **underscores the necessity of a strong military**, but also **invests heavily in alliances, partnerships, and institutions of all levels** to **expand** American **influence** and **establish legitimacy** of American action.” (Wiki, d) (CSIS within the Wiki citation).

When Looking at FDOs:

- More Moral and Soft Options (Wheeler - Point)
- Opens Doors to Agencies, NGOs, IGOs
- Normative: Moral Power and Influence

Smart Defense is a Strategy component supporting Smart Power

“We Europeans must understand that soft power alone is really no power at all . . . Without hard capabilities to back up diplomacy.” Rasmussen - 2013



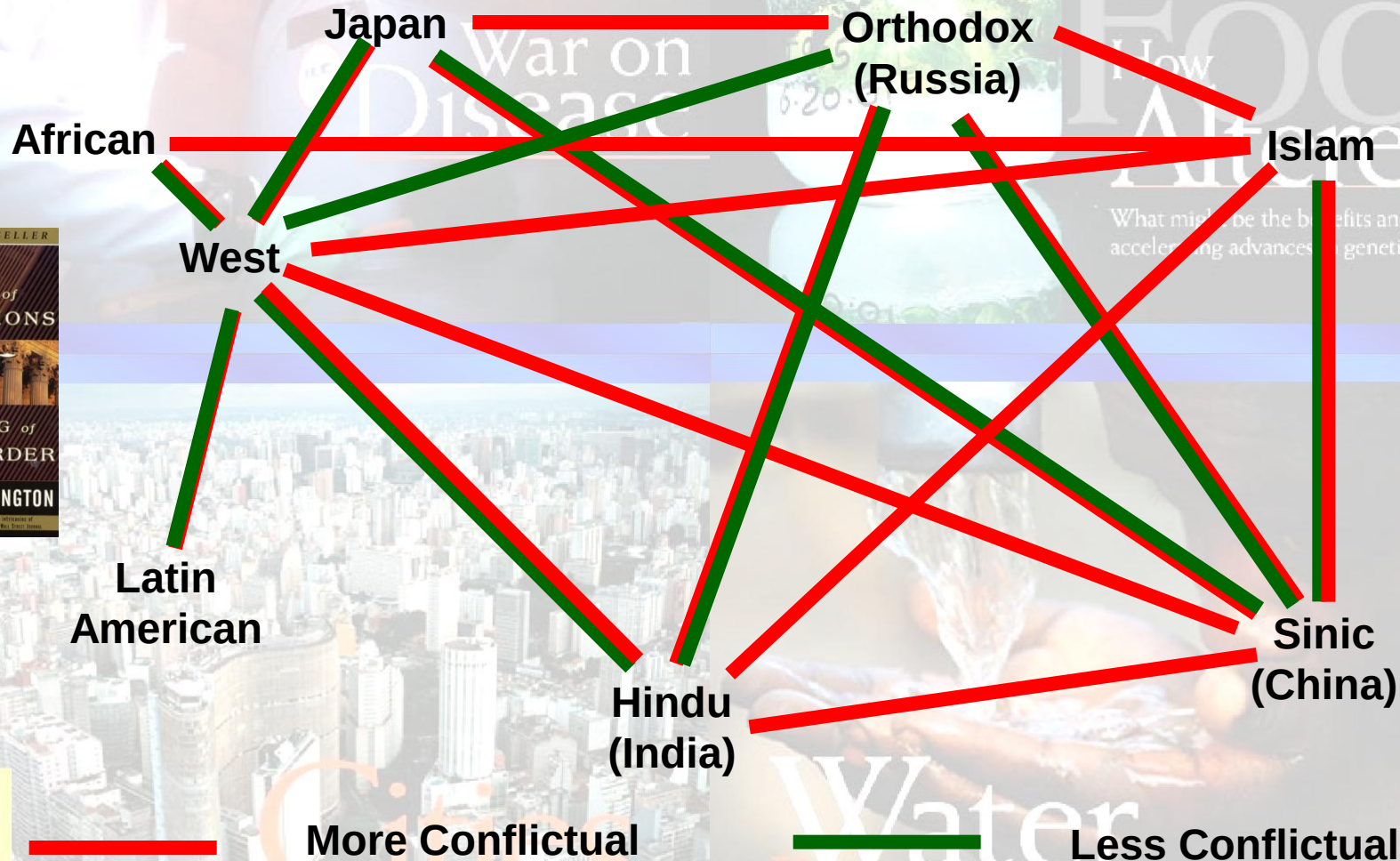
# The New “Horizontal” Scenario

- No clear beginning/end: drags on slowly
- Definition of who is enemy changes over time
- Allies come and go; some may turn on you
- Strategy evolves; strikes, not battles
- Definition of the “problem” is subject to debate
- World goes on meanwhile; situation seems frozen

## Changing the View and the Analysis Dimensions

**Post-Cold War Horizontal Scenario**

# The Global Politics of Civilizations: Emerging Alignments



## Another Dimension Set – The Human Terrain

Derived from 'The Clash of Civilizations and the Making of World Order', Samuel P. Huntington, Touchstone, 1997, Fig. 9.1, p. 245.

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- **Business wise – Functional v Divisional**
  - Hybrid more likely

| <u>Directive Specificity</u> | <u>C2 Philosophy</u> | <u>Historical Example</u> | <u>Theater HQRs Capacity</u> |       |                           |
|------------------------------|----------------------|---------------------------|------------------------------|-------|---------------------------|
| Mission Specific             | Control Free         | German WW II              |                              | Loose |                           |
|                              | Selective Control    | Israeli                   |                              |       |                           |
| Objective Specific           | Problem Bounding     | UK                        |                              |       | Degree Of Central Control |
|                              | Problem Solving      | US                        |                              |       |                           |
| Order Specific               | Interventionist      | Modern Soviet             |                              |       |                           |
|                              | Cyclic               | Chinese                   |                              |       |                           |

Amenable to information system support     
 Requires inherently creative and therefore capable people

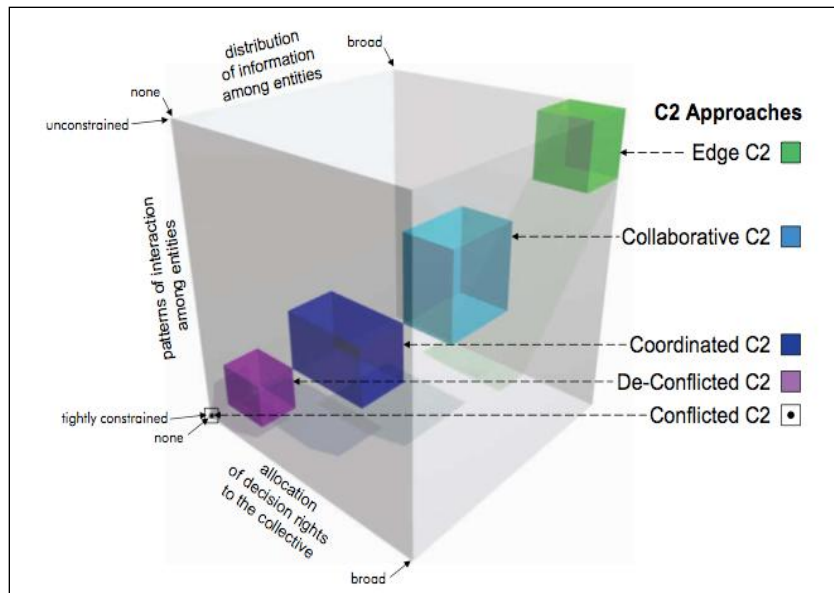
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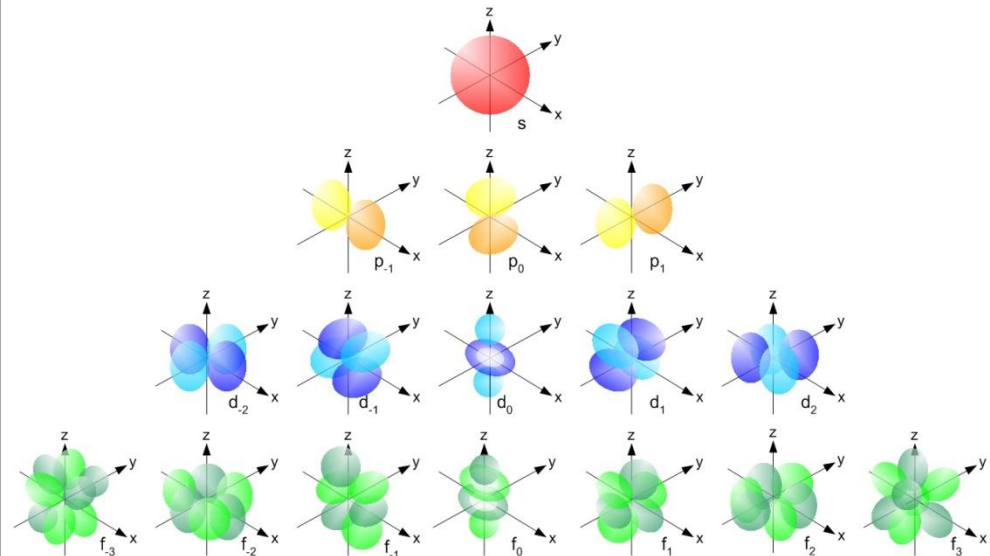
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# Instantiation & Possibilities

## Position of C2 Approach / Decision Style



Positions of Decision/Leadership Styles



Quantum Chemical Electron Shells

Current Instantiation

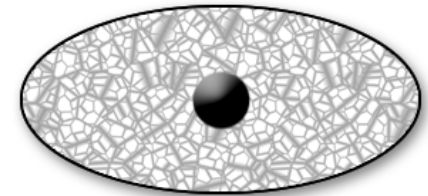


Implied Possibilities

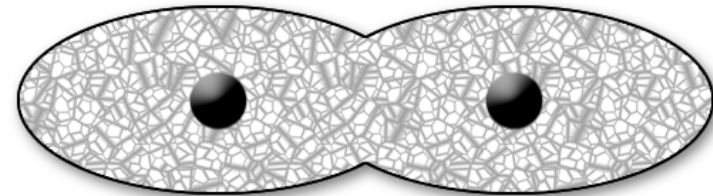


# Network Types – Another View of Transition to n-Dimensions

Self-organized Scale Free Network and a key hub.

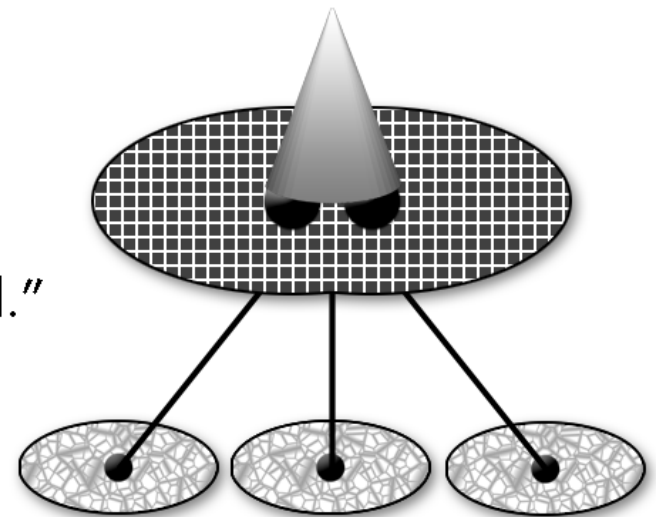


Scale Free Networks overlap.



Scale Free Networks become closer.  
Formal organizations evolve to provide  
linking rule base. Associated Scale Free  
Networks become formalized and so “Small World.”

New formal organizations and their rules  
provide context for new self-organizing  
Scale Free Networks to spawn, and so on...





# Several Interesting Sources

- **Allison – 3-dimensions - distinct**
  - Bureaucracy Policy – Individual Personality – Rational Actor
- **Asimov – continuum of unifying rules/principles**
  - Four Laws of Robotics
- **Card – Wiggins Children – synergism of individuals for multiple purposes/outcomes**
  - Peter – Valentine – Andrew (Ender)
  - Locke – Demosthenes – Warrior/Speaker
- **Dickson – continuum of individual ➔ complete/whole**
  - Marriage of the ‘types’ – becoming whole and complete
  - Paul Formain – Donal Graeme – Hal Mayne
  - Philosophy/Ethics – Warrior – Faith/Zeal
  - (Exotics – Dorsai – Friendlies)

Network Types – Another View of Transition to n-Dimensions

Self-organized Scale Free Network and a key hub

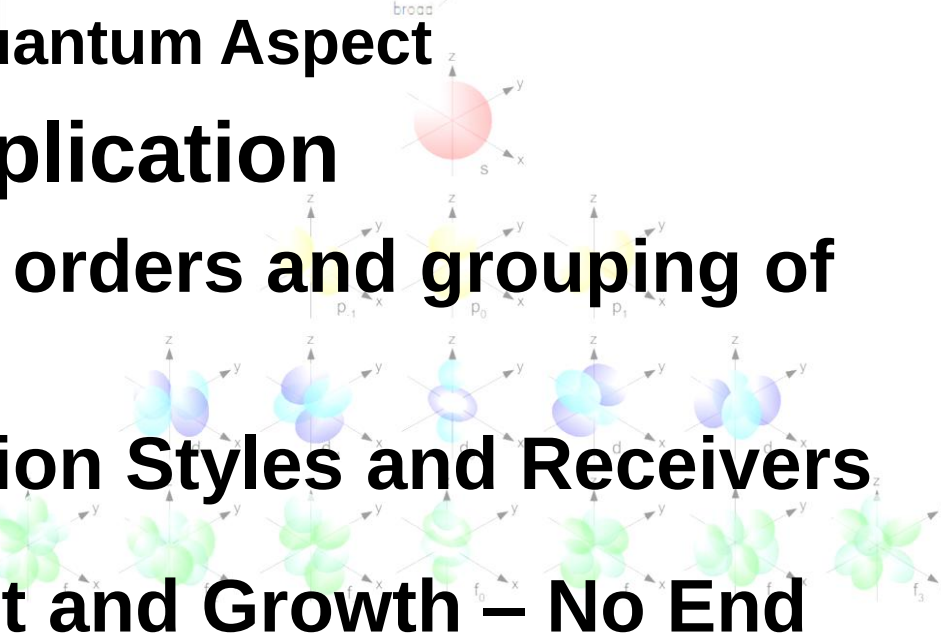
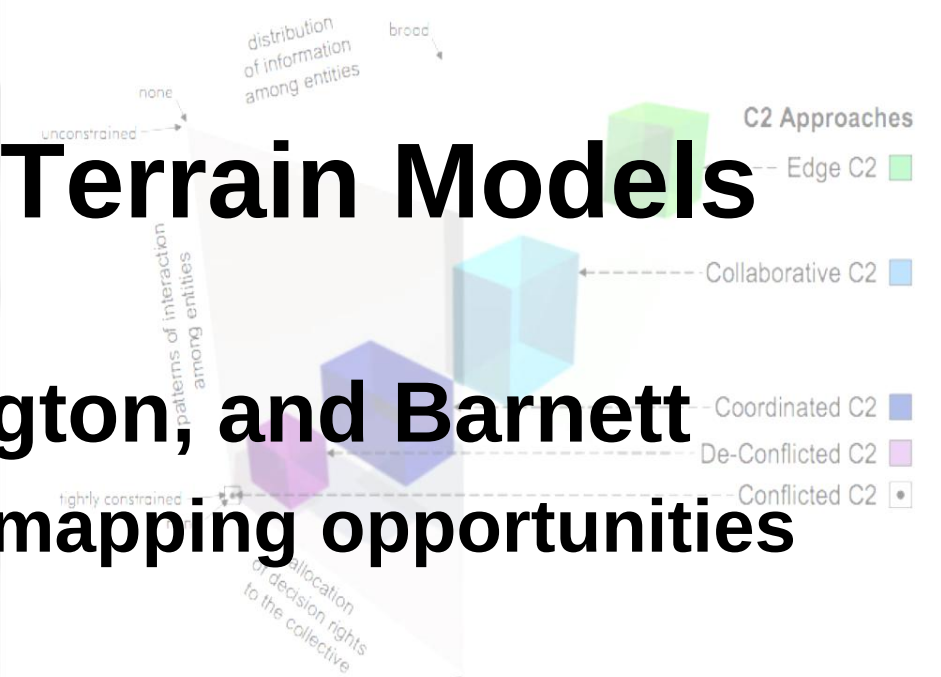
Scale Free Networks overlap.

Scale Free Networks become closer. Formal organizations and rules provide linking rule base. Associated Scale Free Networks become formalized and so “Small World.”

New formal organizations and their rules provide context for new self-organizing Scale Free Networks to spawn, and so on...

SOURCE: “THE AGILE ORGANIZATION”. ATKINSON & MOFFAT, CCRP, 2005, Fig 4.5, p. 113.

# A New View of Terrain Models





– **Current: C2 Approach/Decision Approach at Three Dimensions**

- **Linear approximation of data relationships; and,**
- **Operation at one location/action style at a time**
- **Move along a surface for solutions/decisions**

- IDEAL

- **Future: C2 Approach/Decision Approach Extended to N-Dimensions**

- Quantum aspects of n-parameter data relationships; and,
  - ☆ Simultaneous operation at multiple location/action styles
  - ☆ Move through the surface/data for solutions/decisions



# Summary Points – Conclusion

- **Uncertainty will remain**
  - Knowledge ➔ Understanding (n-dimensions)
    - Projected source ‘to mitigate’
- **N-dimensions ➔ new patterns/visualizations**
  - Reveal alternate paths
    - Quantum tunneling opportunities
  - Multiple patterns of interaction – Human terrain
- **Transition to n-dimensions**
  - Leaders & Leading Organizations
    - Linear ➔ quantum n-dimensions
    - Multiple styles at same time – maker & receiver
  - Improved Knowledge and Understanding

**Complex Threats = Complex Systems = Complex Decisions**

Mr. C. Deegan, Former Executive Director, PEO IWS

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¿ – Questions – ?

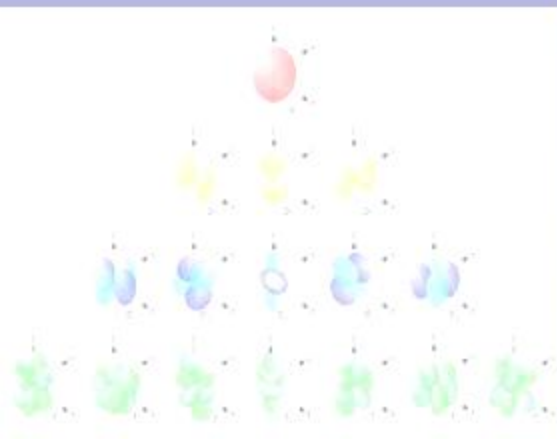
Preparing Capable Decision Makers

for an Uncertain Future Within

Russell E. Bryant

Underdeveloped, Degraded and  
Denied Operational Environments

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# **BACK-UP**

**Detailed FDOs listings**

# Detailed FDOs Part 1

- Informational
  - Heighten public awareness of the problem and potential for conflict
  - Gain popular Support
  - Promote U.S. policy objectives through public policy statements
  - Take measures to increase public support
  - Maintain an open dialogue with the press
  - Take steps to gain and maintain the confidence of the public
  - Gain Congressional support
  - Heighten Informational Efforts
    - Quickly
    - Honestly
    - Within the security restraints imposed by the crisis
  - Keep selected issues as lead stories
  - Protect friendly C4I assets
  - Impose sanctions on C4I technology transfers
  - Interrupt satellite link transmissions
- Diplomatic
  - Reduce international diplomatic ties
  - Promote democratic elections
  - Reduce national embassy personnel
  - Initiate noncombatant evacuation procedures
  - Alter existing meetings, programs or schedules
  - Take actions to win support of allies and friends
  - Identify the national leader who may be able to solve the problem
  - Use the UN or other international institutions
  - Work within an existing coalition or alliance (seek to avoid unilateral actions whenever possible)
  - Increase cultural group pressure
  - Restrict activities of diplomats
  - Show international resolve
  - Clearly identify the steps to a peaceful resolution
  - Prepare to withdraw U.S. embassy personnel
  - Pursue measures to increase regional support
  - Coordinate efforts to strengthen international support
  - Initiate actions to start the development of a coalition of nations
    - Heighten informational efforts directed at:
      - The international community
      - The people within the nation
      - The allies of the opponent
      - The coalition formed to overcome the crisis

- **Military**
  - Employ ready in-place units
  - Upgrade alert status
  - Increase strategic reconnaissance
  - Increase collection efforts
  - Initiate or increase show-of-force actions
  - Employ electronic measures
  - Conduct aircraft flyovers
  - Increase exercise activities, schedules, and scope
  - Increase military exchanges and staff visits to the area
  - Pre-stage or deploy contingency ready brigades
  - Pre-stage airlift
  - Pre-stage airlift support assets
  - Institute provisions of existing host-nation agreements
  - Emplace logistics infrastructure where possible
  - Impose restrictions on military personnel retirements, separations, and leaves; establish curfews
  - Open pre-positioned storage facilities
  - Deploy SAG/MAG to the region
  - Deploy CVBG to the region
  - Move MEB to the region
  - Raise units' deployment status
  - Begin moving forces to air and sea ports of embarkation
  - Increase mobile training teams
  - Deploy tactical fighter squadrons
  - Move forward-deployed ARG/MEU(SOC) to the region
  - Activate procedure to begin reserve callup
  - Increase naval port calls or air squadrons visits to the area
  - Deploy AWACS to the region
  - Move MPS/AWR to the region
  - Use naval or air capability to enforce sanctions
  - Open and secure sea and air lines of communication
  - Pre-stage sealift and airlift reception assets to air and seaports of embarkation
  - Increase informational efforts: PSYOP; Measures directed at the military forces of the opponents; and Mission awareness

## Detailed FDOs Part 2

- **Economic**
  - Freeze monetary assets in the U.S.
  - Seize real property in the U.S.
  - Enact Trade sanctions
  - Freeze international assets where possible
  - Sponsor trade sanctions/embargo actions in UN and/or other international organizations
  - Reduce security assistance program
  - Embargo goods and services
  - Cancel U.S.-funded programs
  - Encourage corporations to restrict transactions
  - Heighten international efforts directed at:
    - Financial institutions, questioning the soundness of continuing actions with the opponent's businesses
    - Reducing or eliminating corporate transactions

# Alignment and Balance

- Obama, who supposedly speaks so well, is behaving better than he is speaking. In an essay in the May/June issue of the American Interest ("Leading from Behind: Third Time a Charm?"), Owen Harries and Tom Switzer argue that Obama understands the "most important sentence ever written about American foreign policy," **Walter Lippmann's formulation:** "Without the controlling principle that the nation must maintain its objectives and its power in equilibrium, its purposes within its means and its means equal to its purposes, its commitments related to its resources and its resources adequate to its commitments, it is impossible to think at all about foreign affairs."