



BLITZKRIEG TECHNOLOGY & NATIONAL SECURITY

Military Theories for Governing Emerging Technologies

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Plan of Attack

- Military metaphors
- Governing Innovation
 - What is technology?
 - How does it change?
 - GRINN
- Technology and National Security
 - American Battlespace Dominance
 - Types of Conflicts
 - Future developments



Military Metaphors

Shapin on Latour on Science:

“The military metaphor is of course Latour’s trademark, and it is basic to his understanding of scientific and technological activity. Technoscience is war conducted by much the same means. Its object is domination and its methods involve the mobilization of allies, their multiplication and drilling, their strategic and forceful juxtaposition to the enemy.”

Karl Weick on Business:

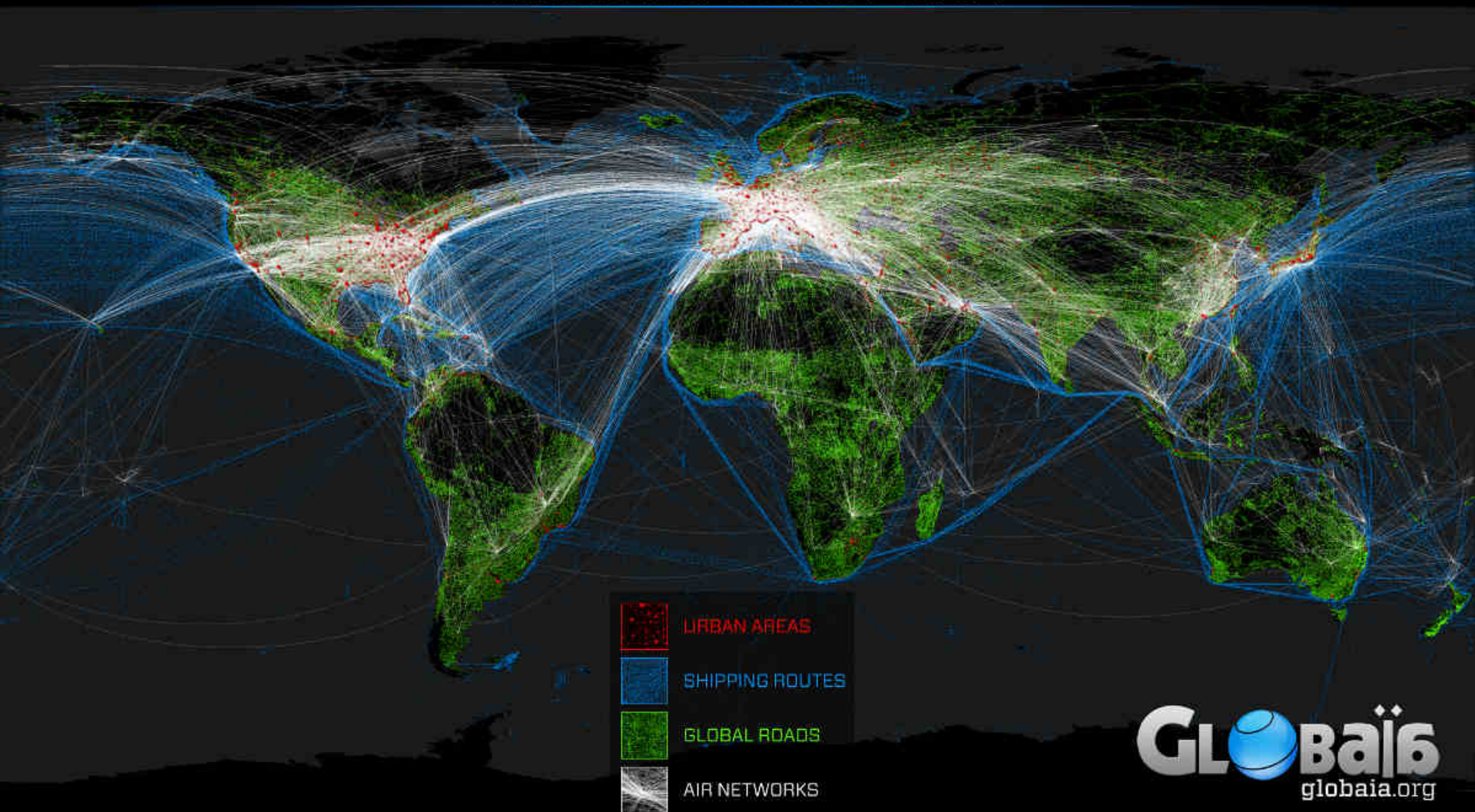
“Consider these samples of organizational talk. Organizations have a staff, line, and chain of command. They develop strategy and tactics. Organizations give people marching orders, pass muster, attack competitors, recruit MBAs, conduct basic training, converse with the brass at headquarters, wage campaigns, access the rank and file, field well-drilled salesmen, deplore a garrison mentality, retreat, gather intelligence, do battle, fire traitors, recruit spies, consider mutiny, employ diversionary tactics, launch frontal assaults, discipline their troops, and lament that the code of conduct doesn’t work.”



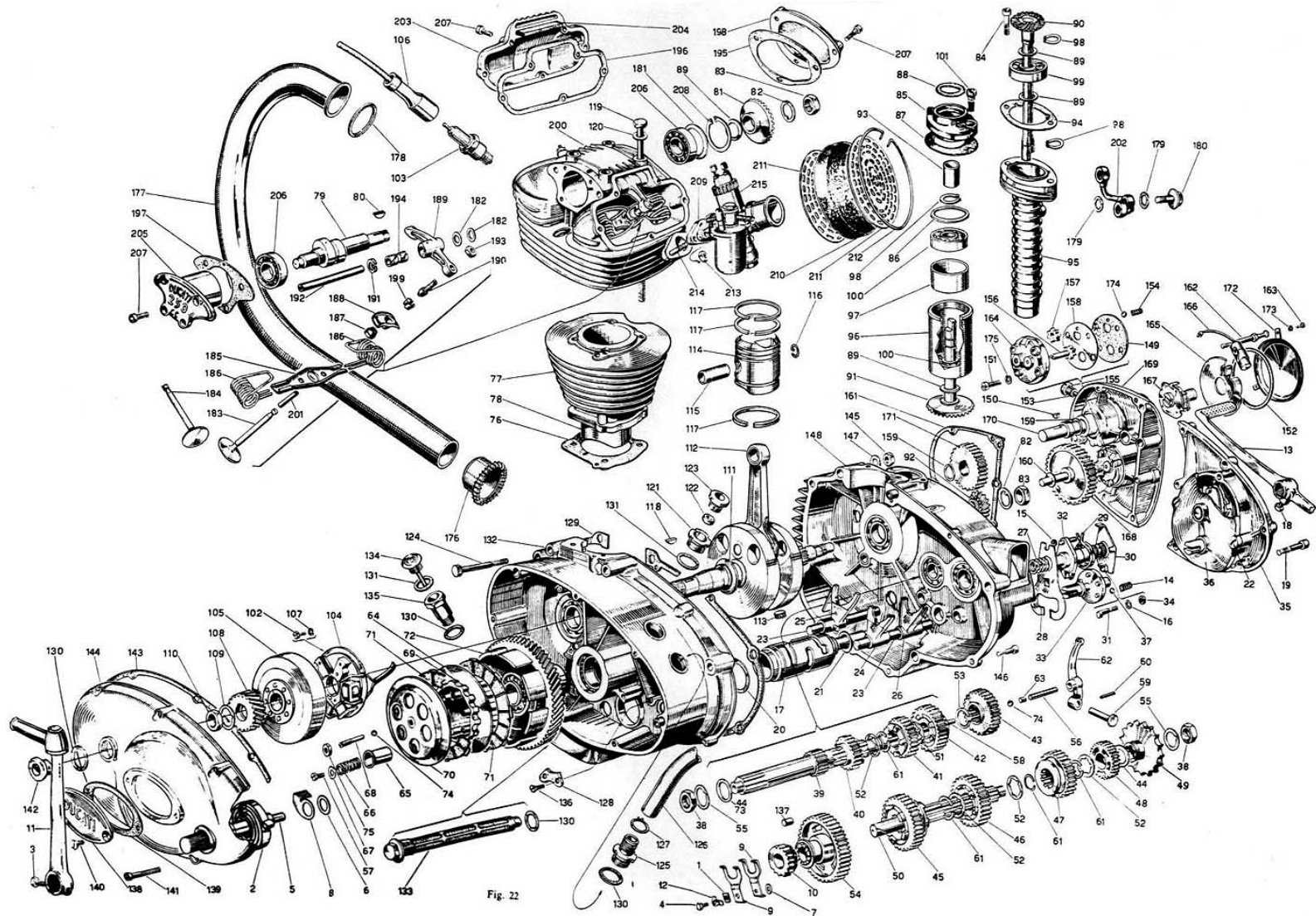
In War, there are
No Second Chances

Technology, Innovation, Governance

THE ANTHROPOGENIC PLANET

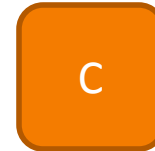
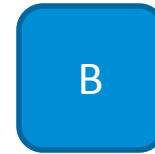
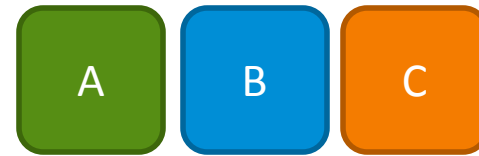


Modularity: Artifact

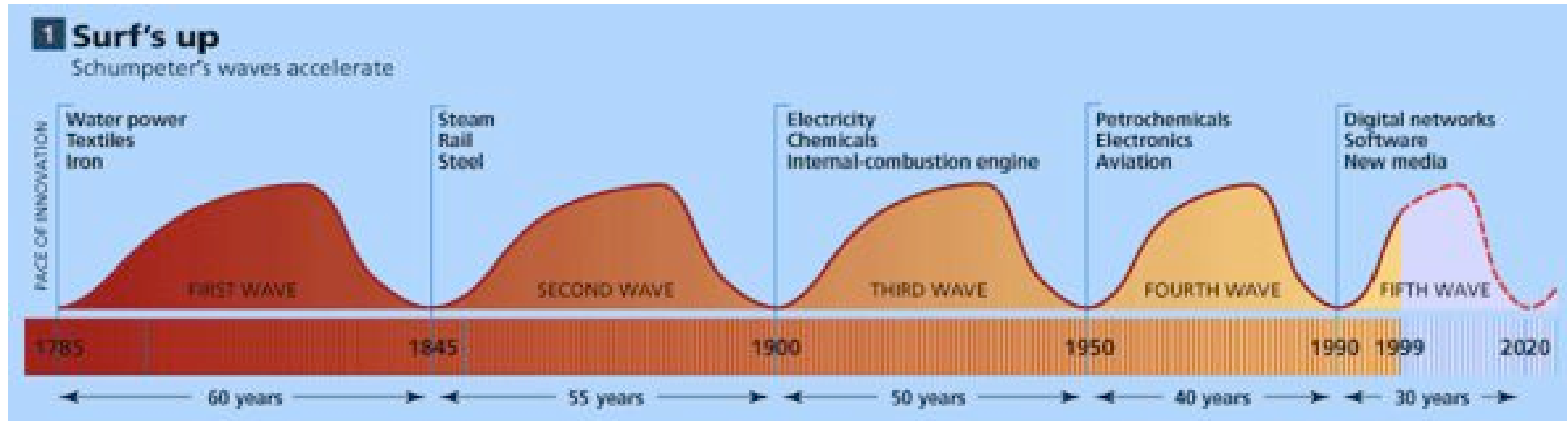




Innovation: Combinatorial Evolution



Technological Revolutions



~50 year cycles of economic growth and decline

Industrial revolutions

- Water
- Steam
- Electricity-Internal Combustion-Industrial Chemistry
- Computers, Telecoms, Digital
- GRINN (?)

Domain Translation

Stored
Chemical
Energy



Mechanical
Work

Physical
World



Digital
Domain

GRINN Domain Translations



Life
Static
Data
Matter
Psychology



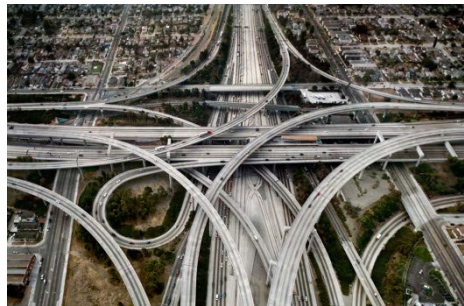
Genetics
Robotics
Information
Nanotechnology
Neuroscience



Information
Mobile
Emotion
Structure
Engineering



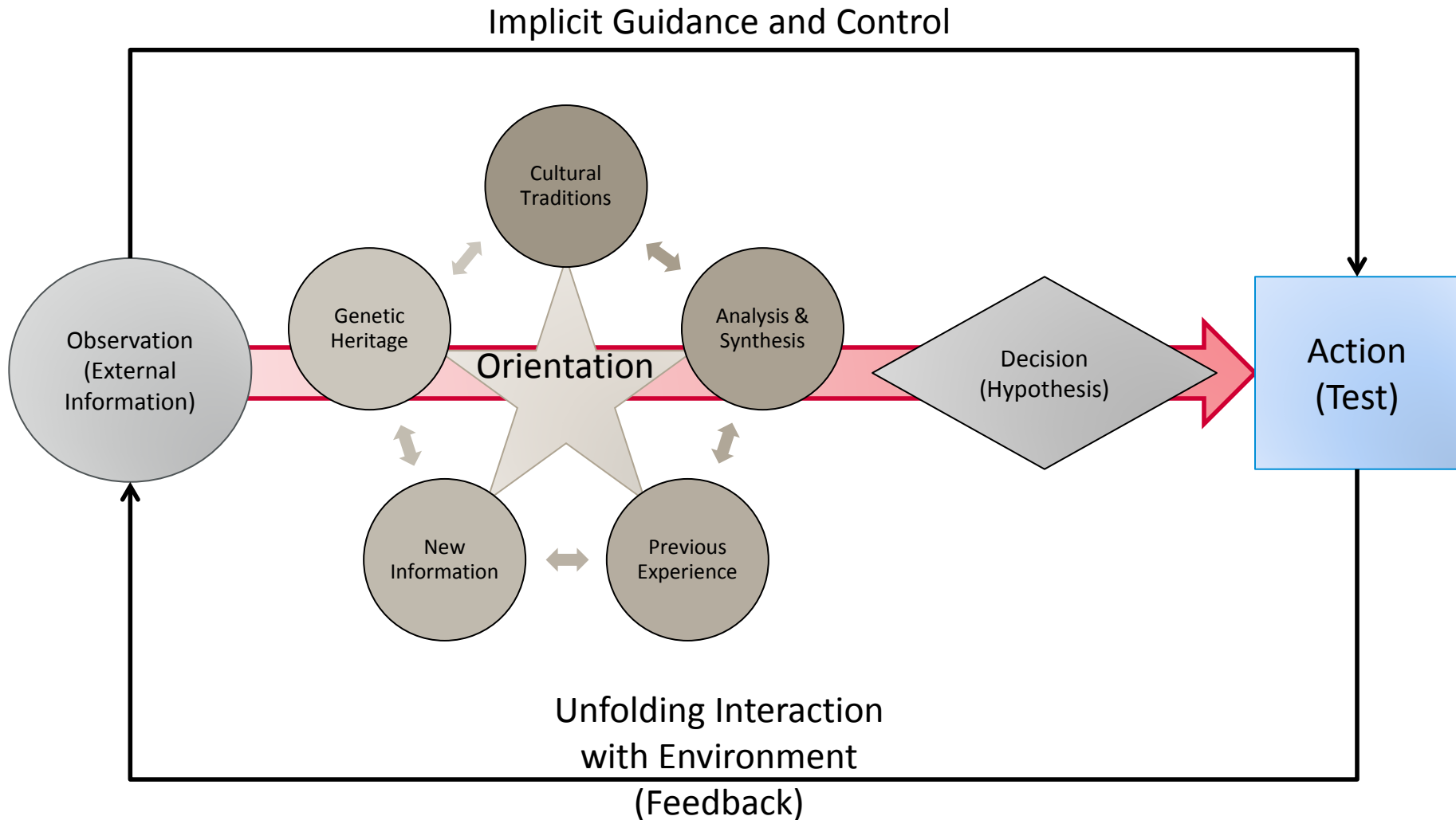
Modularity: Socio-Technical Systems



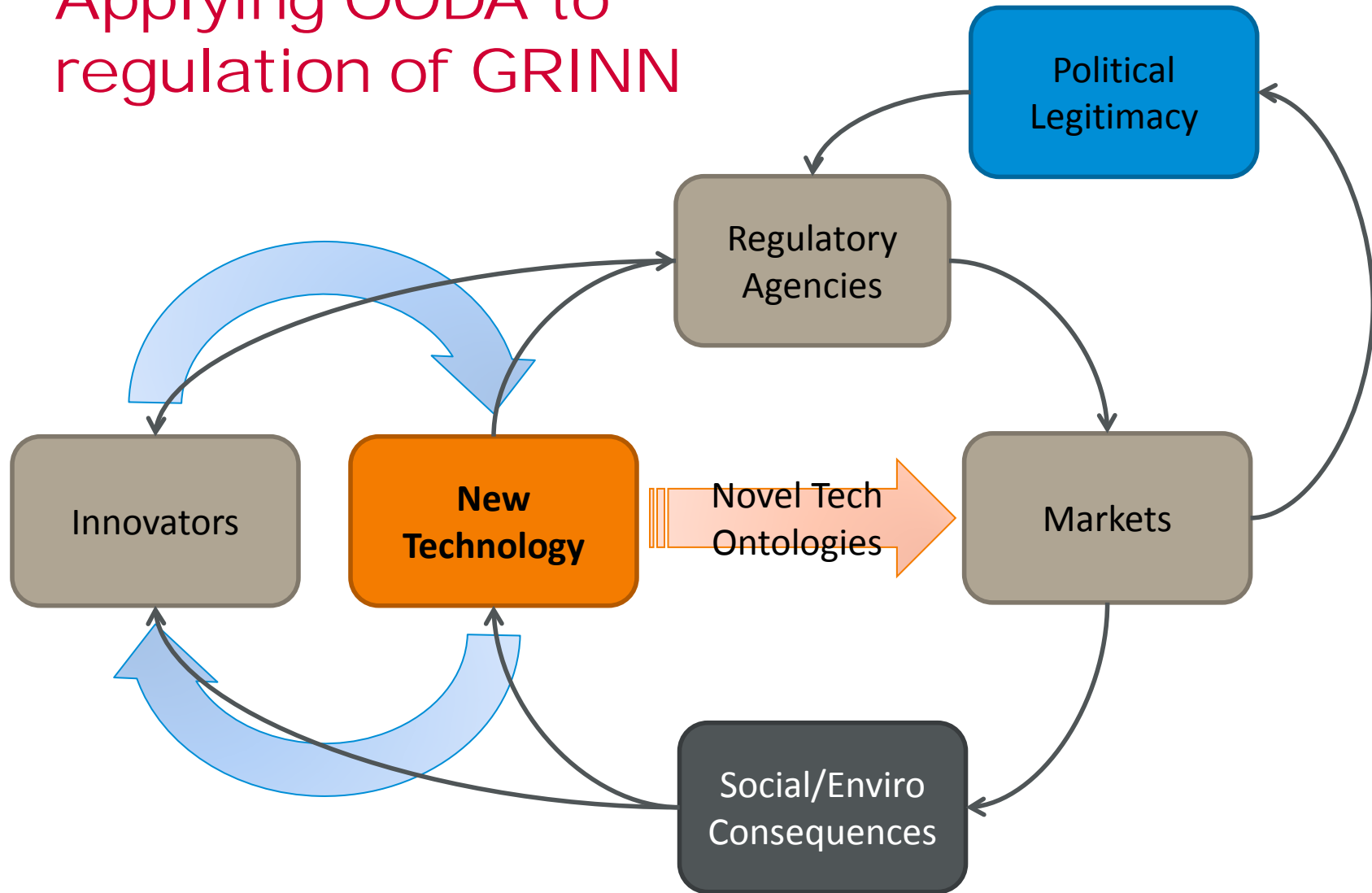
Blitzkrieg!



Observe-Orient-Decide-Act



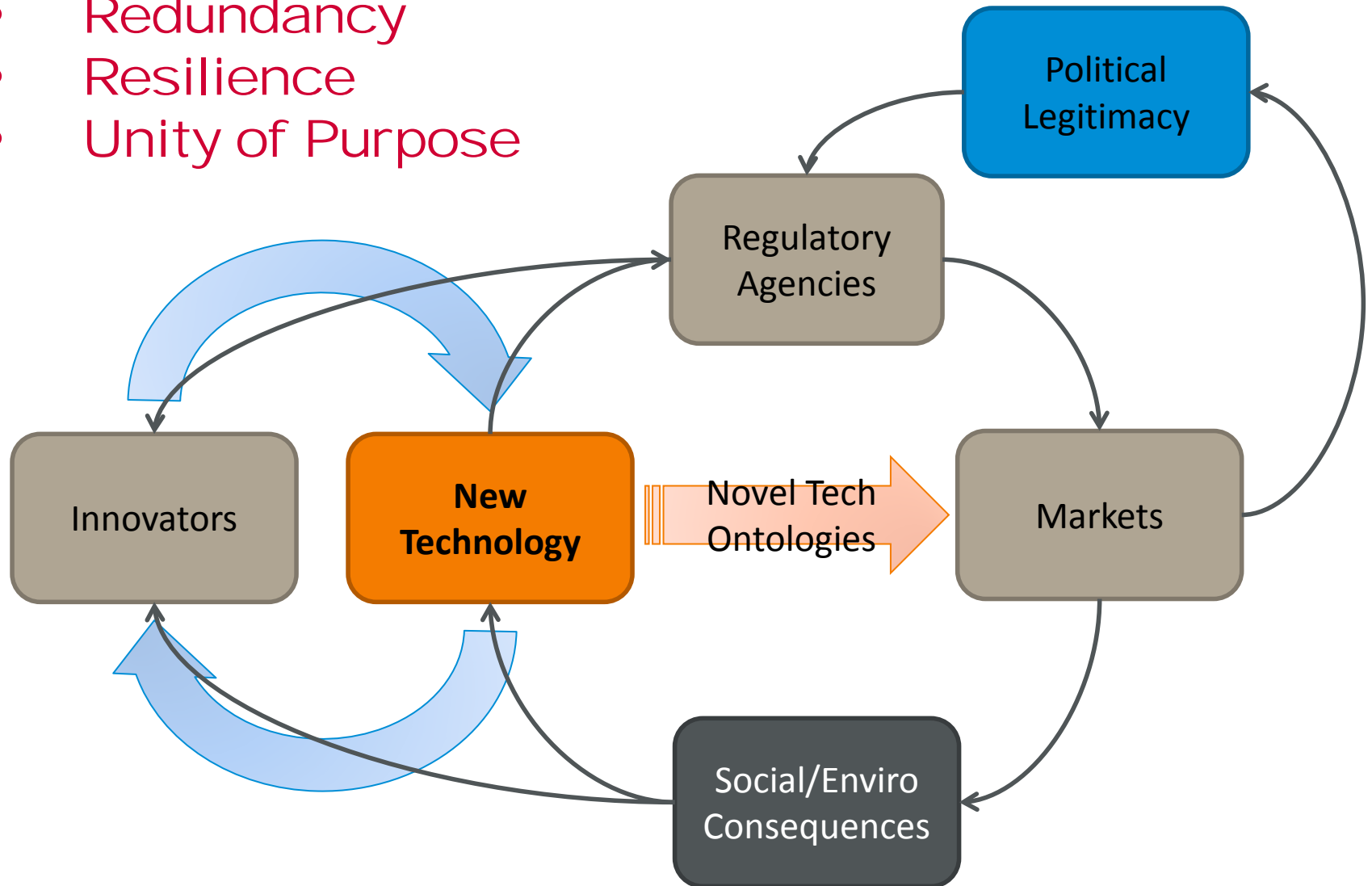
Applying OODA to regulation of GRINN





Regulatory Counter-Blitz

- Redundancy
- Resilience
- Unity of Purpose



War and Technology



1st Generation



2nd Generation



3rd Generation



4th Generation

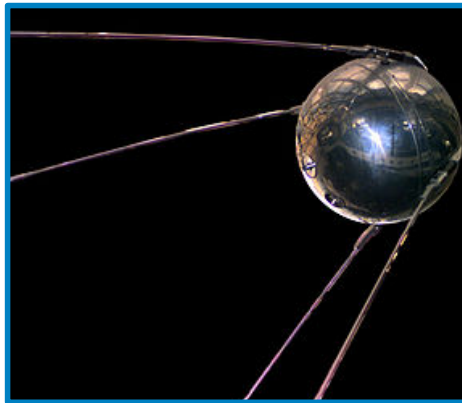
Control of Military Technology

Arms Race



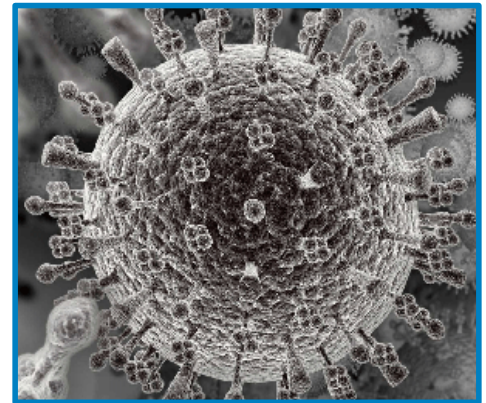
- Competition in conventional arms
- Washington Naval Treaty

Leapfrog



- Obsolescence of existing military system
- DARPA
- “Prevent technological surprise”

Relinquishment

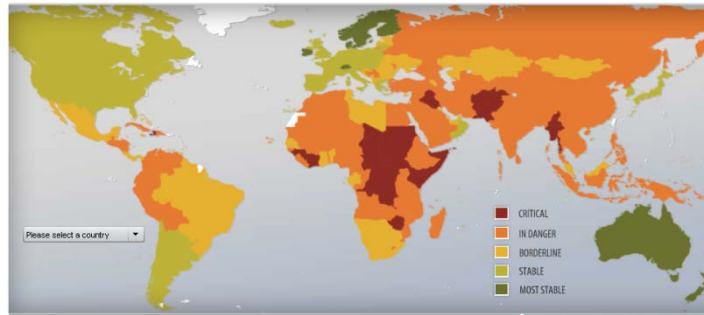


- Avoiding dangerous technologies
- Biological Weapons Convention

Battlespace Dominance



Conflict 1: Failed States



Challenges:

- Battlespace Dominance is poorly suited to low-intensity conflicts
- Expensive deployments vs spotty coverage
- Where does the grid stop?

Conflict 2: Rising Powers



Challenges:

- Battlespace Dominance is untested technology
- “Unrestricted Warfare” operates outside of American military parameters
 - Economic, legal, political, cultural, environmental, etc.

Conflict 3: Super-Empowered Non-State Actors



Life
Static
Data
Matter
Psychology



Genetics
Robotics
Information
Nanotechnology
Neuroscience



Information
Mobile
Emotion
Structure
Engineering



Garage Biowar
Remote Murder
Hard Singularity
Lethal Proliferation
Mind Control





Conclusions: Clarity of Interests

"We acknowledge that the new principles of war are no longer 'using armed force to compel the enemy to submit to one's will,' but rather are 'using all means, including armed force or non-armed force, military and non-military, and lethal and non-lethal means to compel the enemy to accept one's interests'"

--*Unrestricted Warfare*, Qiao & Wang

What are our interests?

Why would an opponent accept them?

Conclusions: Paths not taken



“Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those hunger and are not fed, those who cold and are not clothed.

The world in arms is not spending money alone.

It is spending the sweat of its laborers,
The genius of its scientists,
The hopes of its children.”

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