

New Military History: Using Variety Dynamics

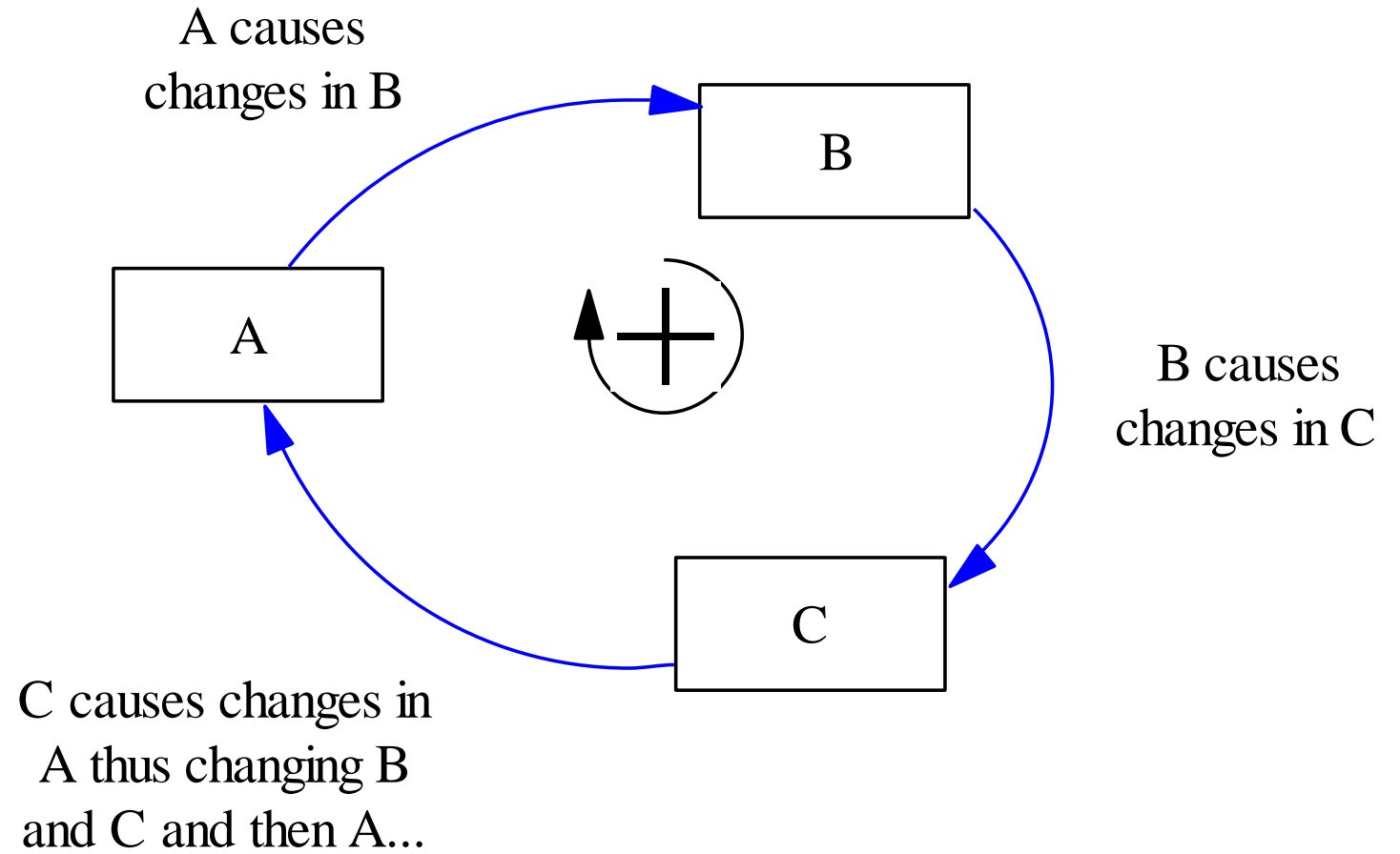
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Real world challenges for military and diplomatic thinking

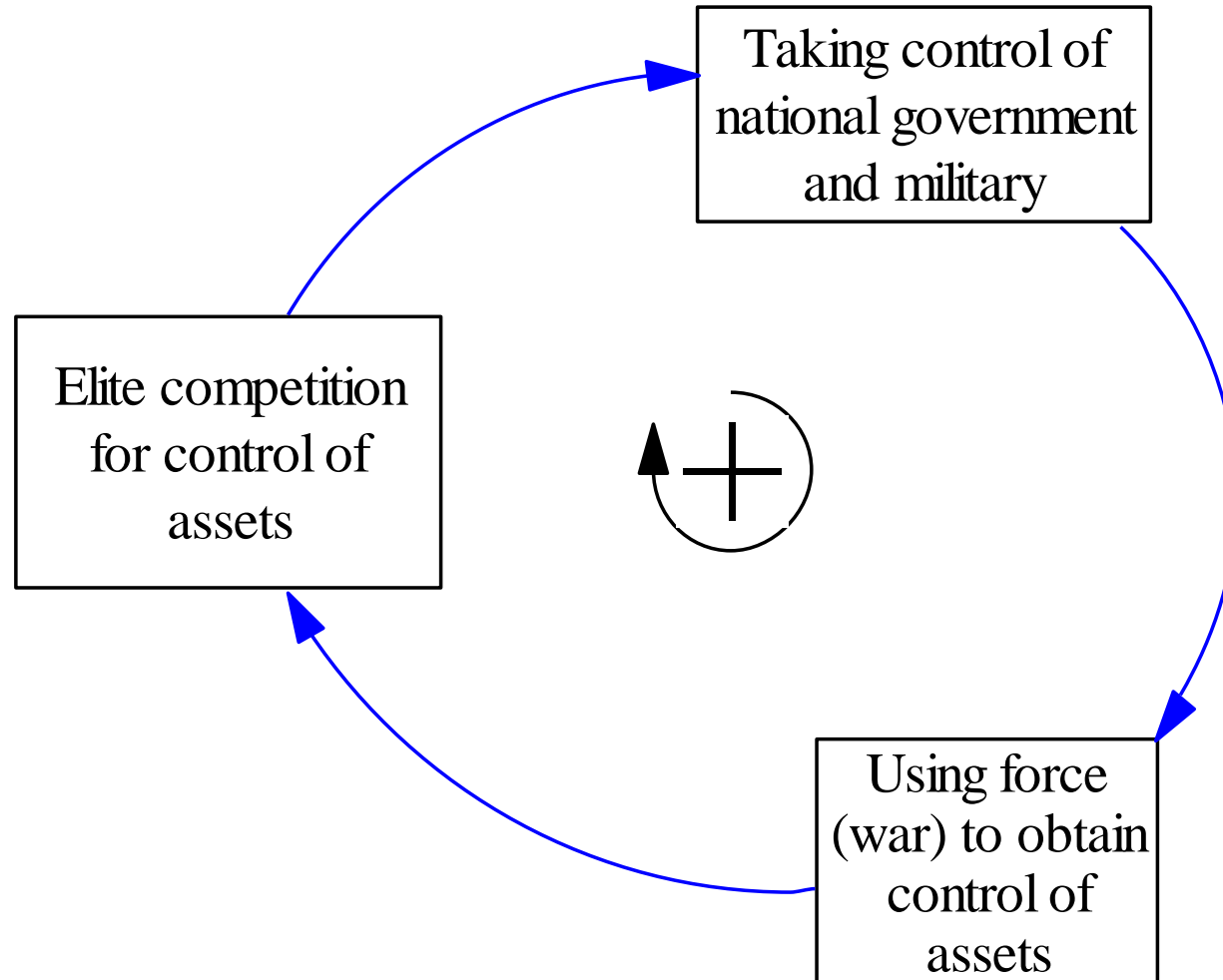


- Situations that do not comply with standard system structure assumptions
- Systems with discontinuous behaviours
- Situations with large numbers of dynamically changing feedback loops
- Coercive systems with multiple dynamics of power and control
- Asymmetric power where those in charge have less power
- Unresolvable conflicts between multiple participants and stakeholders
- Support systems with multiple dynamics of power and control

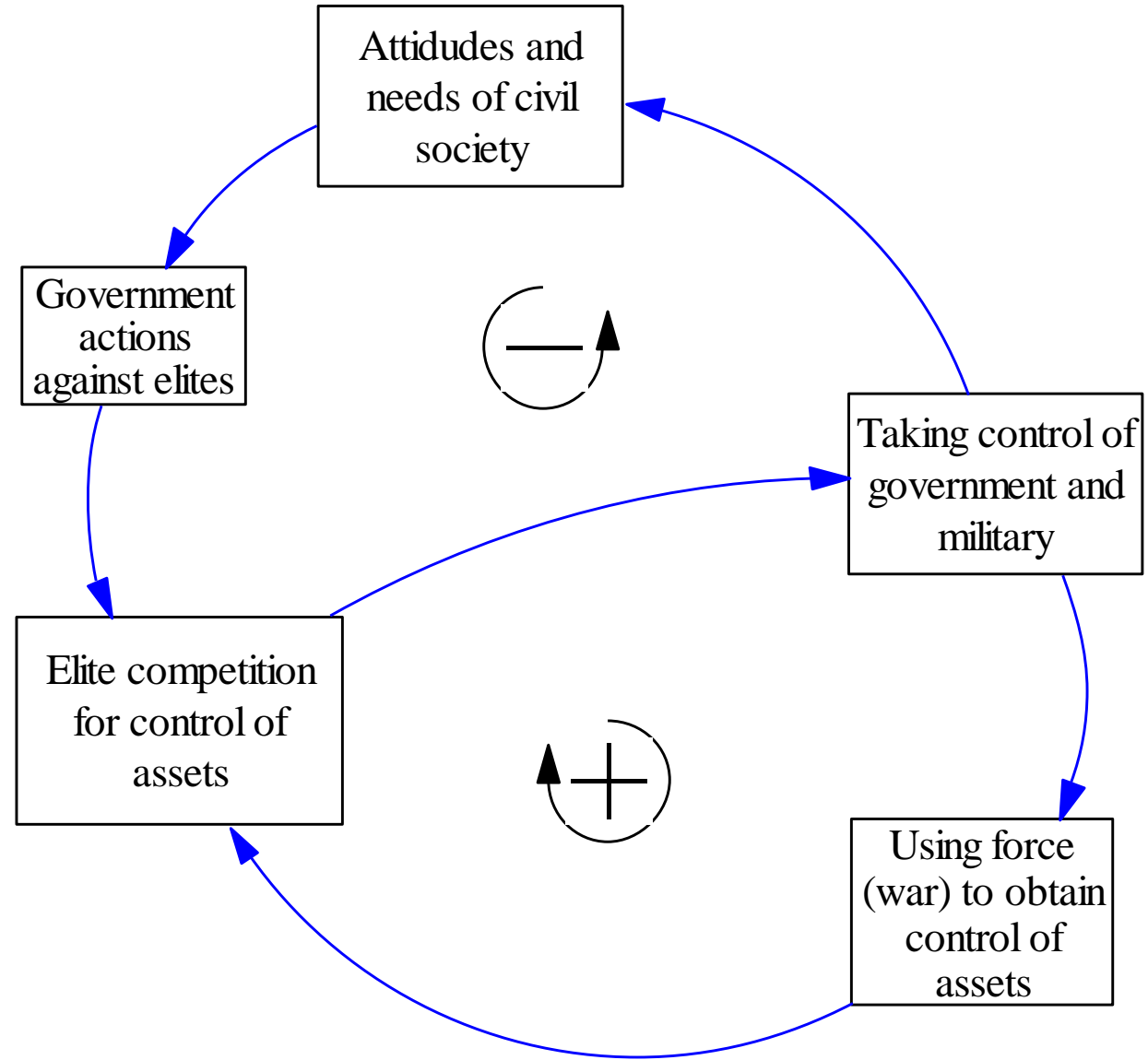
Single feedback loop



Real world single feedback loop



Real worlds Two feedback loop situation



Two Feedback Loop Limitation Axiom

- Individuals cannot **mentally** understand or predict the behaviour of situations whose behaviour is shaped by two or more interacting feedback loops
- There is a widely held **self-delusion** by individuals that they can understand and predict behaviour of situations whose behaviour is shaped by two or more interacting feedback loops

Two Feedback Loop Limitation was identified by Dr Terence Love in 1994 .



Complex Military and Diplomatic Situations

- System behaviours, purpose, ownerships, subsystems, subsystem relationships and control mechanisms vary continuously.
- System boundary(ies) do not separate system elements of interest from environment
- System boundary(ies) not static and not necessarily always owned and controlled by system owner
- Control is dynamic, exerted through multiple changing subsystems and factors; some outside the system
- Multiple feedback loops with changing structure, dynamics, purposes, causal relations, existence and ownership
- Coercive situations involving multiple asymmetric power relations unaligned to subsystems
- Control and system behaviours operate outside variables being addressed
- Parts of system and environment are chaotic
- Most of the situation and its **causal relations are unknown**

The Problem for Military Thinking

How do you create successful military decisions in multi-feedback loop situations when you realise that

- You biologically CANNOT mentally understand any such situation
- You biologically CANNOT mentally predict consequences of your decisions
- You realise that you biologically ALWAYS mistakenly believe you have understood the situation and are ALWAYS mistaken in your predictions of consequences of decisions



Coercive Military hyper-complex situations

- US –Afghanistan and similar wars
- Epidemics with associated disasters and social breakdowns
- Middle East (Saudi, Iran, Israel, Yemen, Lebanon, Palestine, US, Russia, China, India)
- Climate change control and politics
- Local government and its 'influencers'
- Health systems in impoverished countries with low levels of governance or conflicted governance
- Managing malnutrition
- Sectarianism in India
- Large-scale international business competition
- Government of countries captured by criminal cartels or industry lobbies
- Situations with large number of feedback loops in which the systems structure and ownerships of system elements changes
- International political tension between elites (wars by any means)
- National systems subject to hidden control via psyops or similar

Causal Thinking is the Problem

- **Military and Diplomatic** thinking has been primarily CAUSAL
- Failure in complex Military and Diplomatic thinking is due to this focus on **causal** thinking

Variety Dynamics

- **Variety Dynamics** focuses on Military and Diplomatic power and control via **distributions, dynamics, ownership** and **control** of the **dynamics** of **varieties (options)** in hyper-complex situations
- **Variety Dynamics** does **NOT** address or use **CAUSAL** relations

Variety Dynamics was developed from 1972 in Lancaster University and 2004 onwards by Prof Terence Love and Prof Trudi Cooper

Variety Dynamics

Variety Dynamics addresses :

- Multi-actor coercive situations
- Complex warfaring
- Situations where systems and sub-systems change boundaries, existence, purpose and ownerships (i.e. beyond system assumptions for OR and Systems thinking)
- Incoherent boundaries
- 2 feedback loop limitation on mental prediction of behaviours
- Wicked (and super-wicked) problems
- Hyper-complex and chaotic systems
- Corrupt situations and interference
- Agency problem of central power and remote agents
- Control of complex systems by less powerful actors
- Implications for defence, offence, robotisation, automation, AI and ML
- Managing incoherent actions – e.g. surprise attacks

Variety Dynamics

Variety Dynamics currently consists of :

- New approach to strategy and decision making for hyper-complex military, intelligence and diplomatic situations
- Core Variety Dynamics concepts
- 46 Variety Dynamics axioms providing analysis and decision strategies
- Practical strategies for seizing control in military, political and intelligence-related hyper-complex coercive situations
- A new realm of mathematics

Variety

Variety is the number of different possible options for elements in a situation

Military and diplomatic action as a dynamic multi-dimensional variety space

Ashby and Variety Dynamics

Ashby's Law of Requisite Variety:

The variety available to the controller of a system has to be greater than the variety capable of being presented to the controller by that which is intended to be controlled.

Variety Dynamics Axiom 1:

The power of a system element to influence system behaviours depends upon the dynamic balance between the variety available to it, and the variety presented by other elements.

Variety is more powerful than force, power and resources

- Change the variety distribution and variety dynamics to manipulate the ownership of power and change outcomes
- *Ability to manipulate Variety is more important than having physical power*

Variety Dynamics

Axiom 2

Foundational Axiom

For complex and hyper-complex systems involving multiple constituencies in which the distributions of variety generation and control variety is uneven across the system at any one time,

THEN

The differing distributions and dynamics of generated and controlling variety result in a structural basis for differing amounts of power and hegemonic control over the structure, evolution and distribution of benefits and costs of the system by different constituencies.

Practical example of Variety Dynamics Axiom

Activist vs motor industry



1. Activists asked motor industry to implement strict emission control standard - motor industry refused
2. Activists persuade States to implement **different** emission control standards (i.e. increased the variety to be addressed beyond motor industry's ability to control)
3. Activists offered to resolve via a single national emission standard (reduce variety)
4. Motor industry agrees new national emission standard

Management of variety resulted in power transfer TO the activists
FROM the motor industry

Variety change more effective than motor industry's wealth & power.

Variety Dynamics

Axiom

Create shortage of control leading to transfer of ownership of control

Where differing sub-systems of control are involved in the management of a system and some sources of control can increase their variety to accommodate the lack of requisite variety in other control systems

then

the overall distribution of control between sub-systems and constituencies will be shaped by the amount and distribution of transfer of control to the accommodating control system.



Power by
overloading
control
varieties

CIA Sabotage
Field Manual

UNCLASSIFIED



SIMPLE SABOTAGE FIELD MANUAL

Strategic Services
(Provisional)

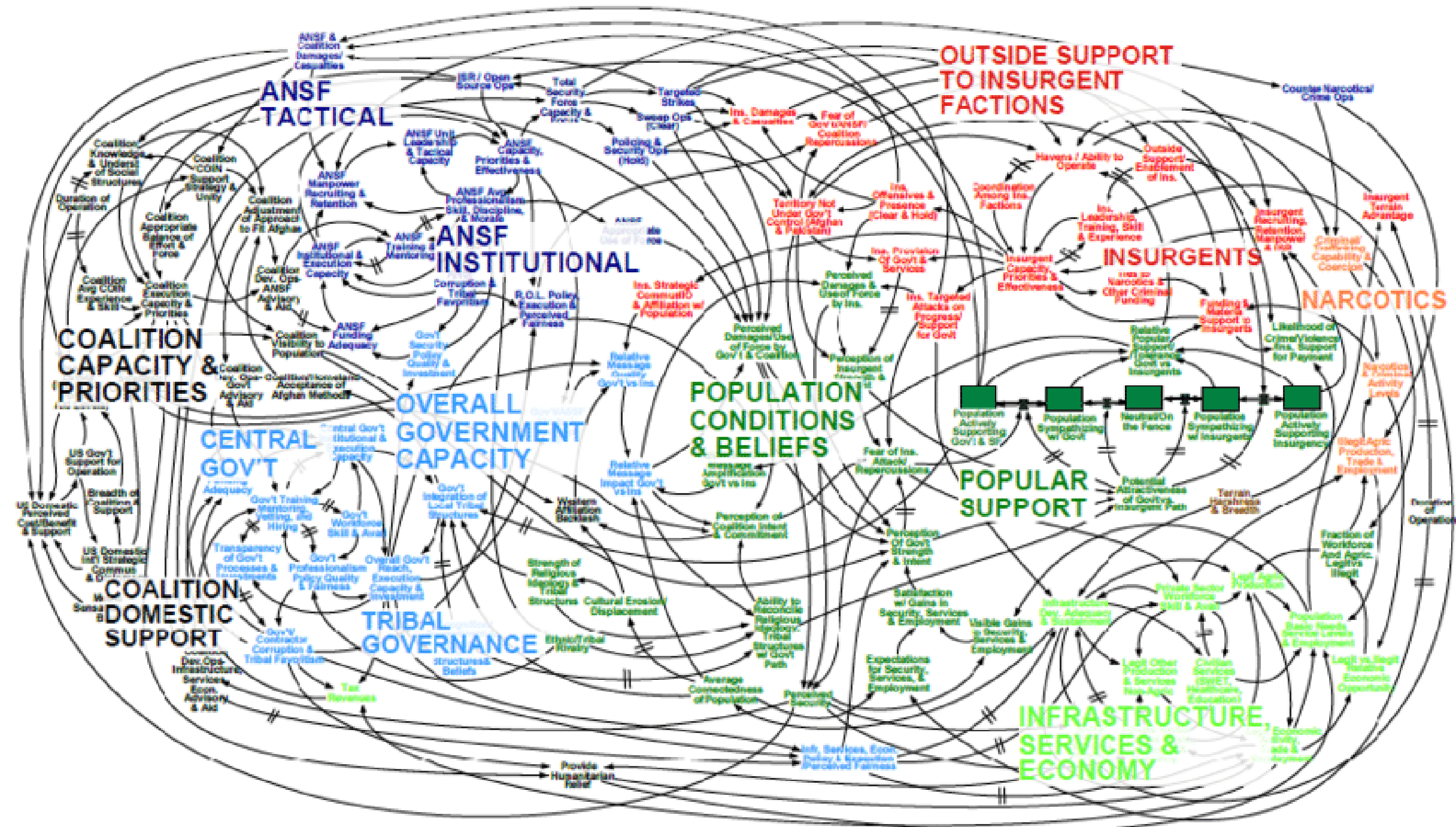
- US encouraged citizens in targeted countries to increase variety by disrupting work etc to overload government control
- Then US offers to intervene and support the government to establish control
- Consequence is power flows from target government to US as a result of changes to variety

Variety Dynamics to manage HQ – agent control issues



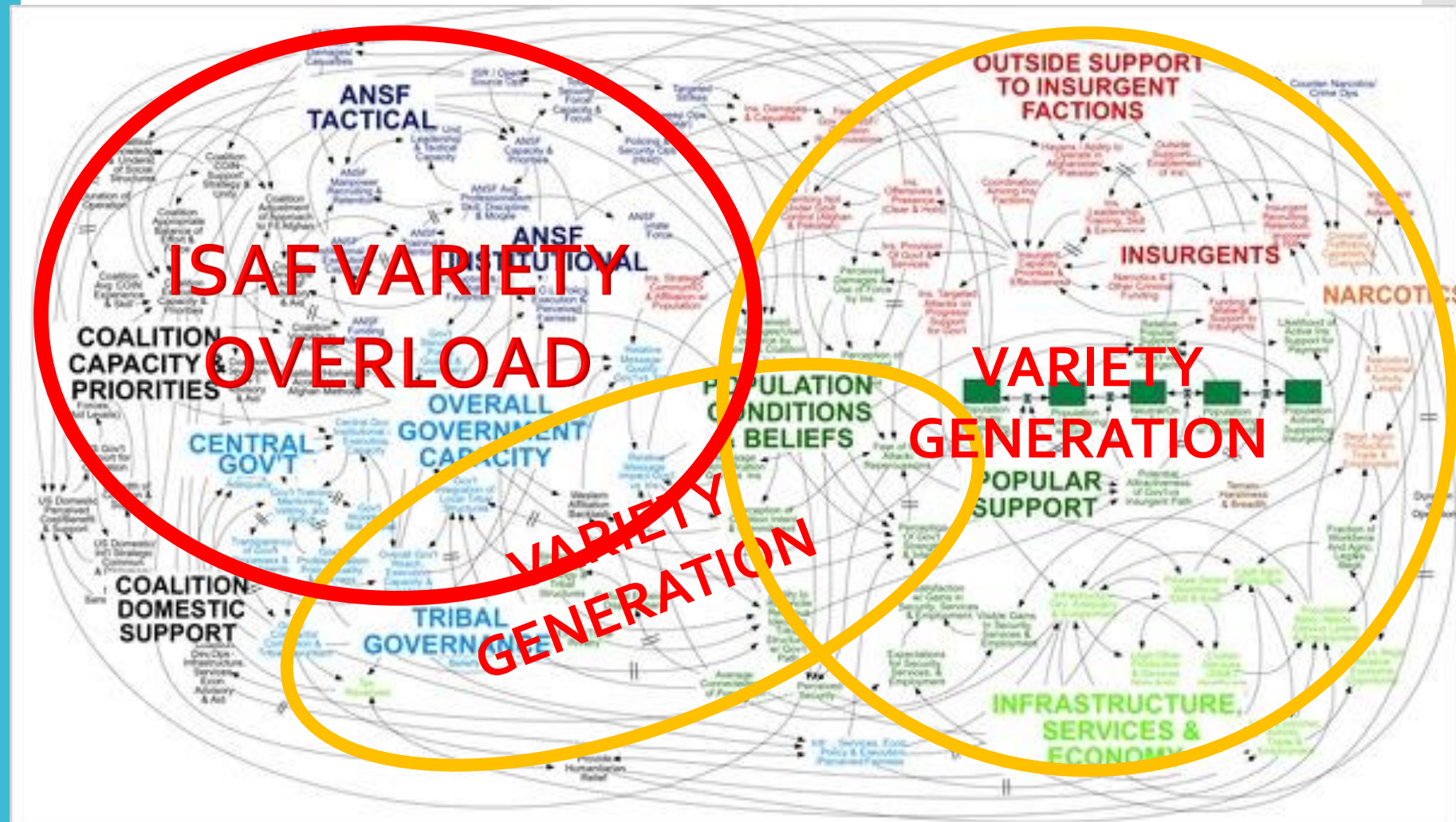
Peripheral organisations can increase the variety that HQ has to provide control for.

This results in an internal war for control between departments and HQ with departments wanting autonomy and HQ wanting control over them



Variety
Dynamic
analysis

USAF and
Afghanistan



Contact details

For more information, for commercial consultancy and advice on specific issues, and for offers to fund/collaborate in research, contact:

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