

# Complex adaptive and 'inquiring' systems approaches for contemporary military operations.

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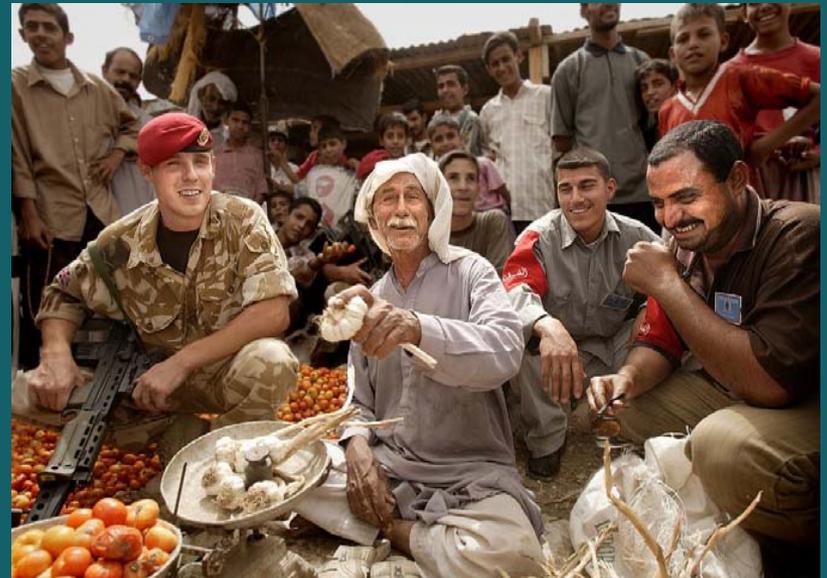
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# Operational assumption

The problems facing us in contemporary operations are socially complex as well as being open-ended.

## Research question

How might we use a multi-perspective approach to help us to more openly understand how to support decision-making in complex operations?



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# Introduction



CIED

Afghanistan

# Meeting the military challenges through open inquiry

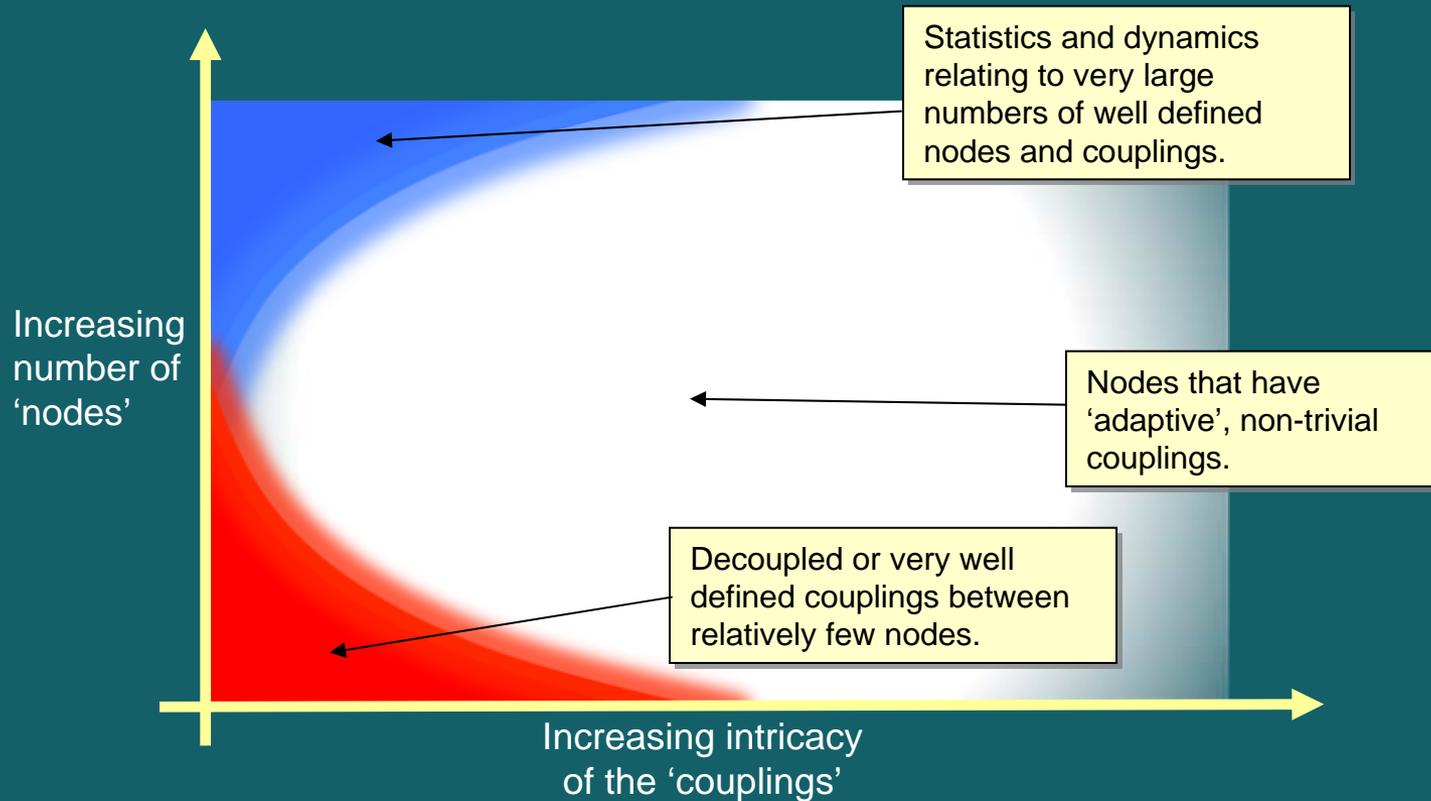
Many practitioners who have experienced contemporary military operations might agree that they are characterised by four things in particular: complexity, ambiguity, uncertainty and volatility and by the fact that they all tend to be 'wicked problems' – problems that are intractable and circular with complex inter-dependencies – where solving one problem can create further problems or make the whole problem greater.

Kiszely, J. (2008). 'Coalition Command in Contemporary Operations', in Williamson M (ed) *Democracies in Partnership: 400 Years of Transatlantic Engagement*.

# The challenge

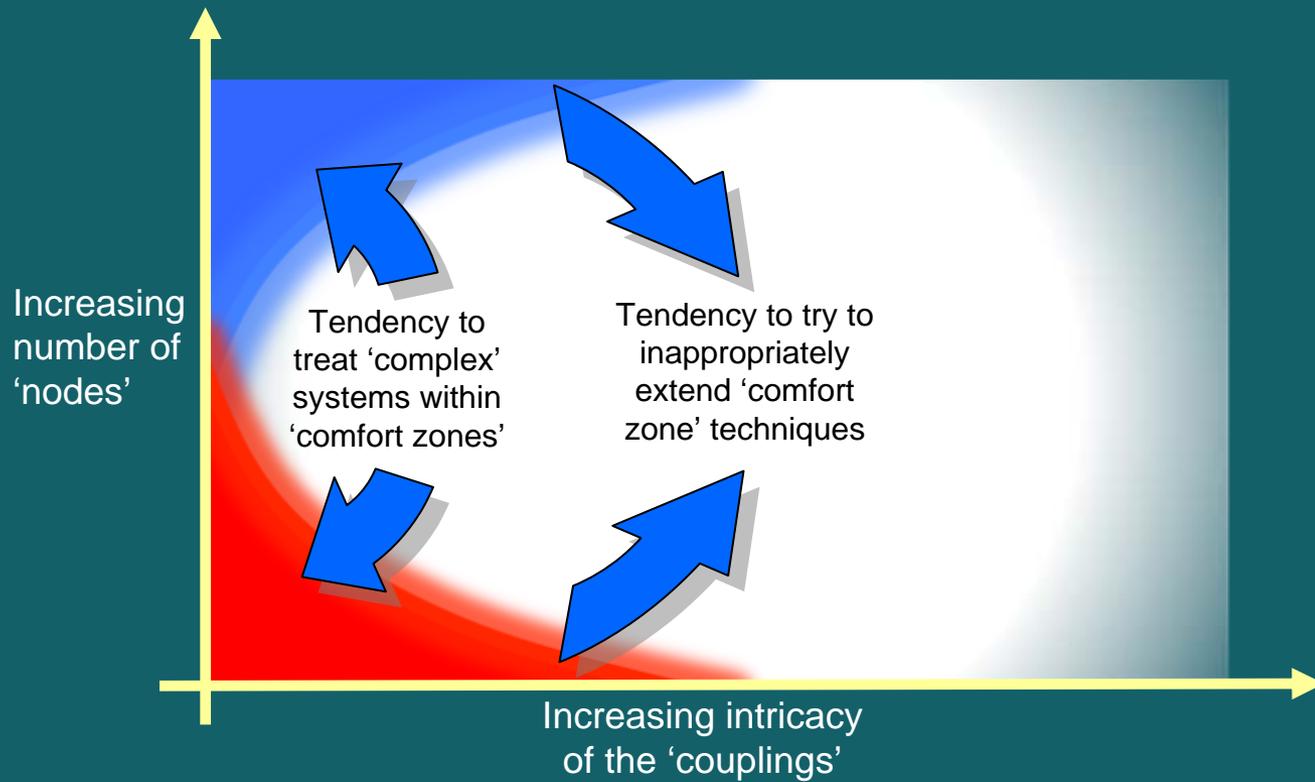
- Based upon this military need the challenge is how to approach these types of problems. Two alternatives are possible:
  - Extending and adapting existing analytical methods.
  - Returning to holistic, inquiring systems thinking, such as proposed by Churchman and Ackoff, resulting in a transformation that includes ‘traditional’ single-viewpoint, objective functions together with subjective, multiple perspective representations.
- C. W. Churchman, ‘The Design of Inquiring Systems: Basic concepts of systems and organisations’, Basic Books, 1971
- R. L. Ackoff, ‘Methods of inquiry’, Educational Publishers, 1950.
- G.L.S. Shackle, ‘The Origination of Choice’, 1986, in Kirzner, editor, *Subjectivism, Intelligibility and Economic Understanding*.

# 'System space'

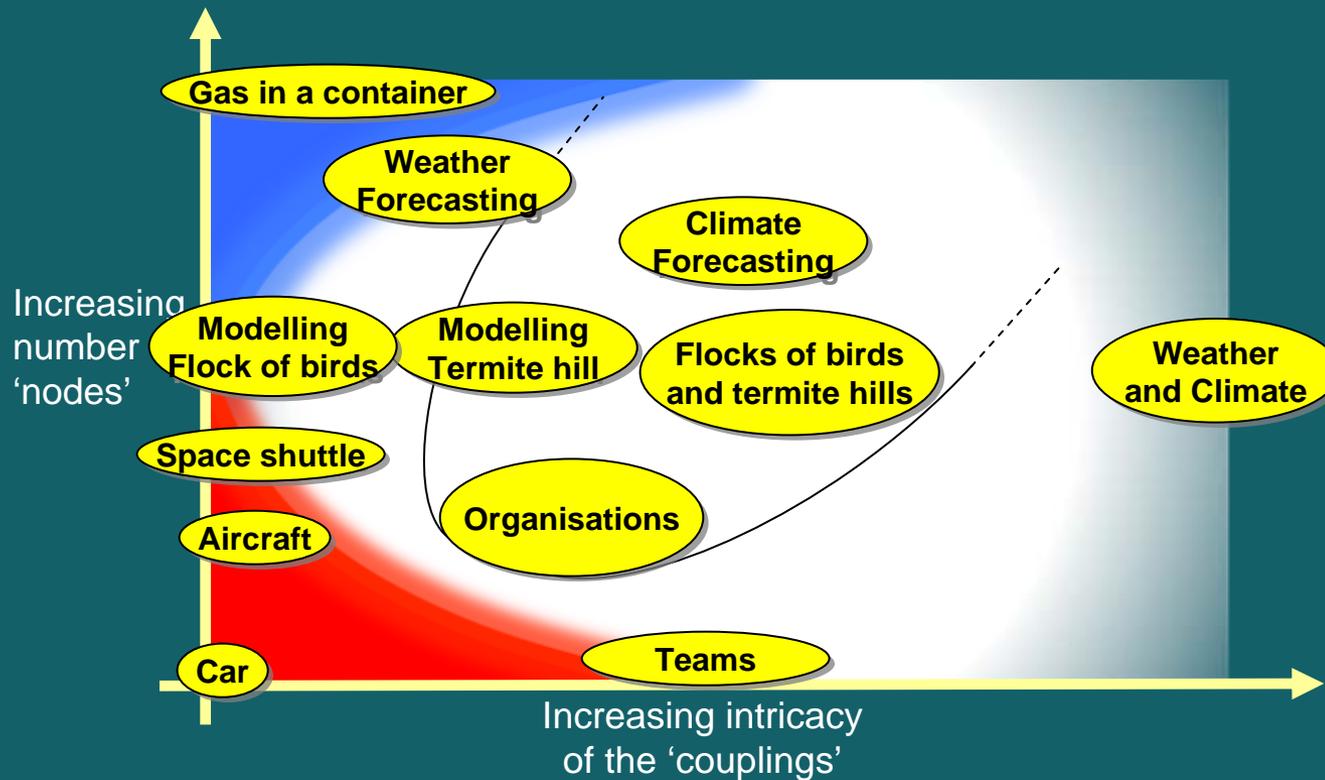


*Bertalanffy, General Systems Theory, 1969*

# Coping strategies



# Example Systems

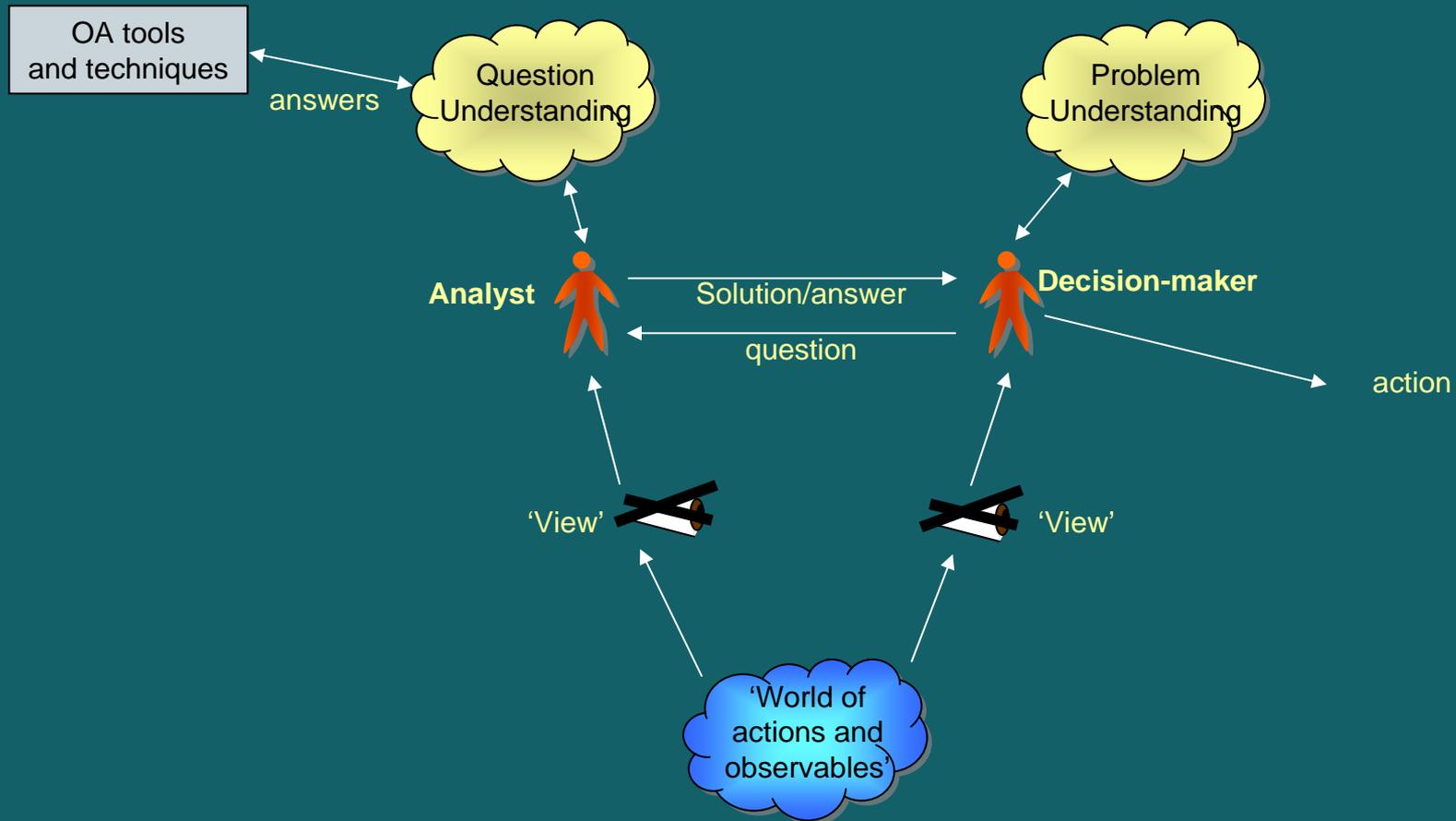


# Analytical context

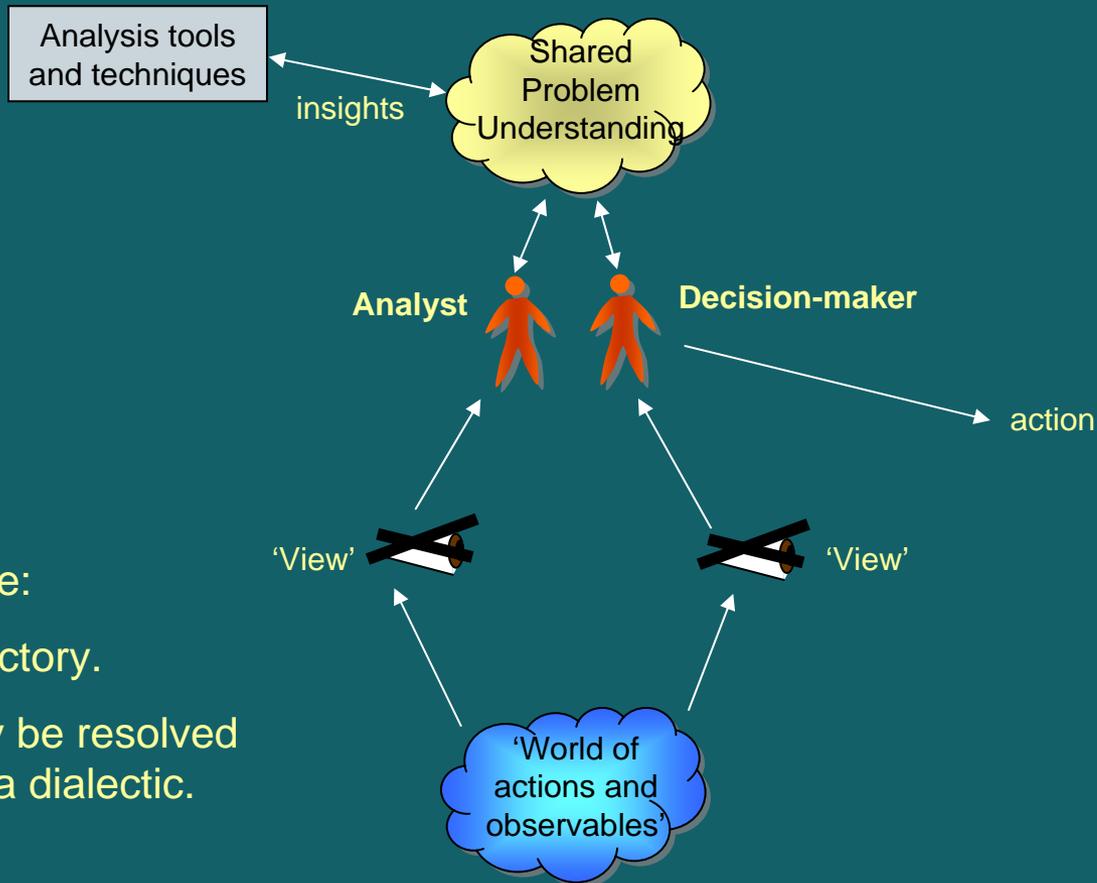


The Unbounded Mind: Mitroff and Linstone (1993)

# Solution-oriented analysis



# Insight-oriented analysis



- Insights will be:
  - Contradictory.
  - Can only be resolved through a dialectic.

# Summary

To provide insights into contemporary military problems:

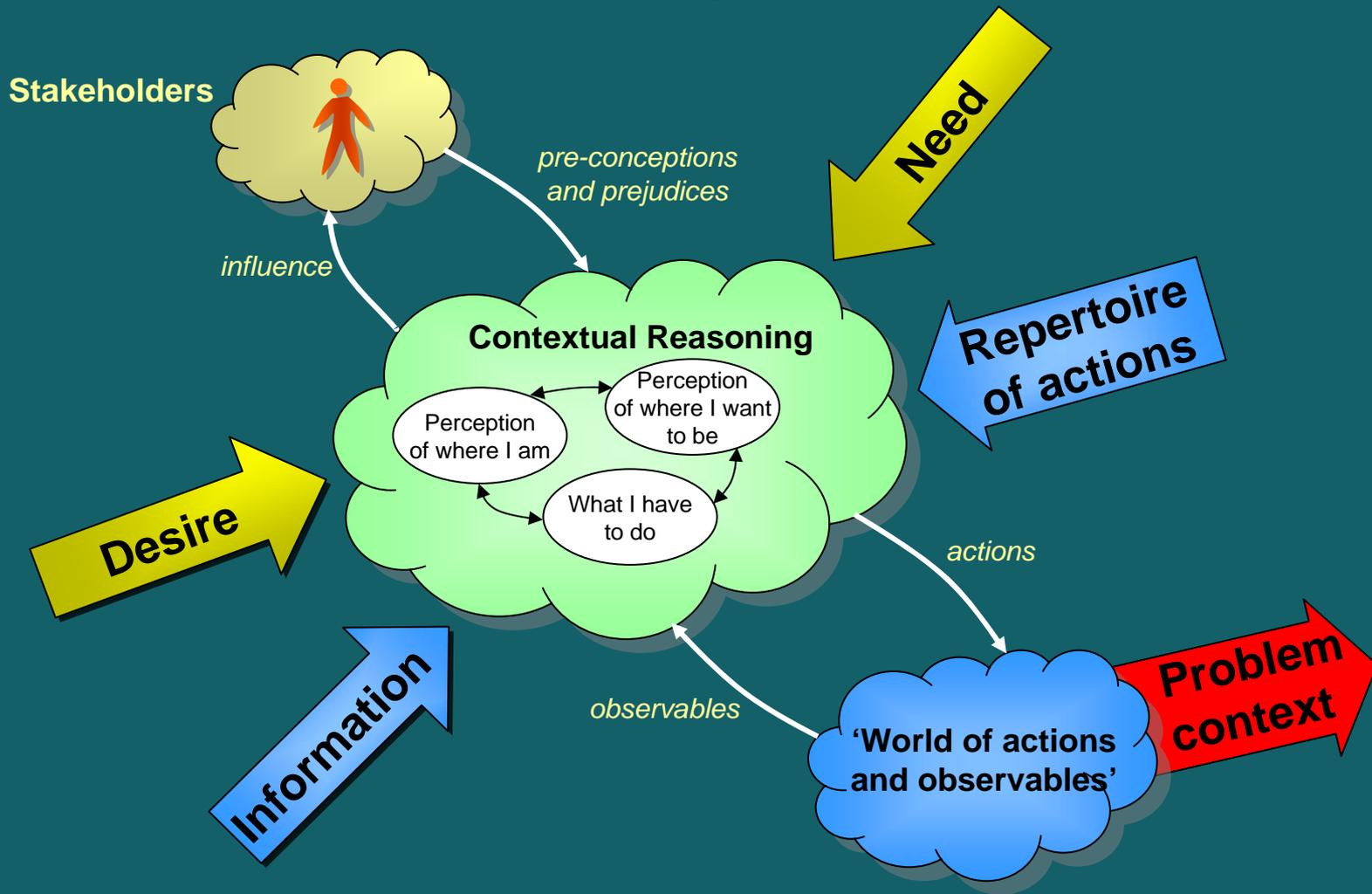
- Existing analytical methods cannot be extended.
- Multiple perspectives are vital for problem understanding.
- Insight will be gained through a dialectic of the contradictory issues raised by the different analytical approaches.
- For this presentation we are concentrating on the 'Personal' dimension.

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## Conceptual Language

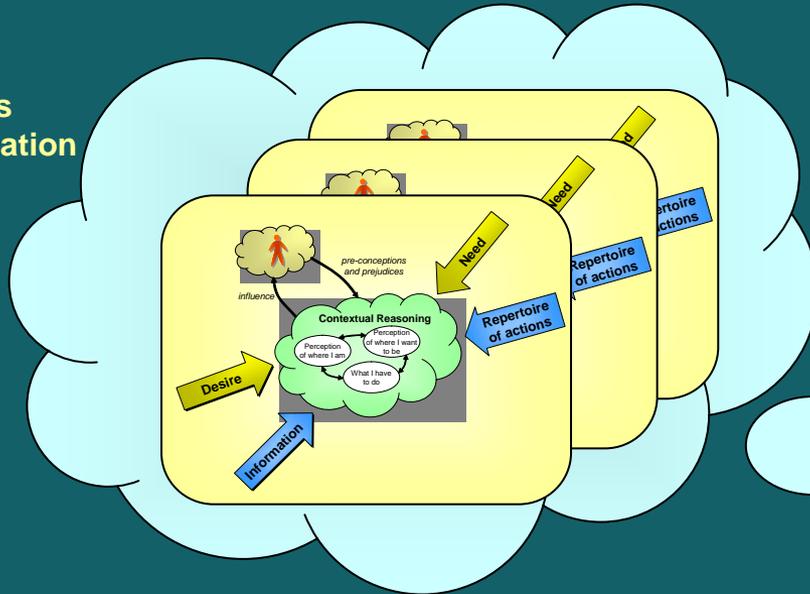
viewpoint open mind

# Concept of a stakeholder viewpoint: single viewpoint



# Concept of multiple viewpoints

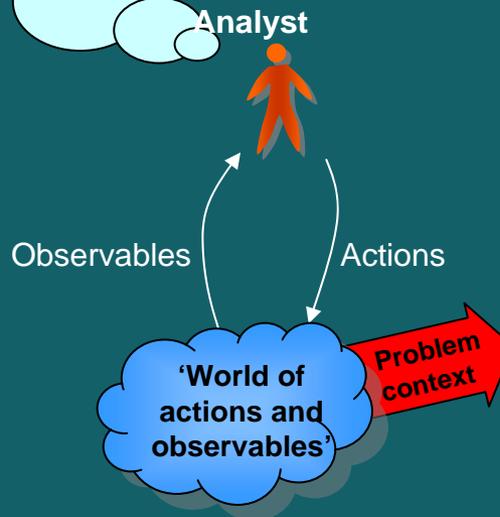
Analyst's interpretation



Multiple stakeholder viewpoints

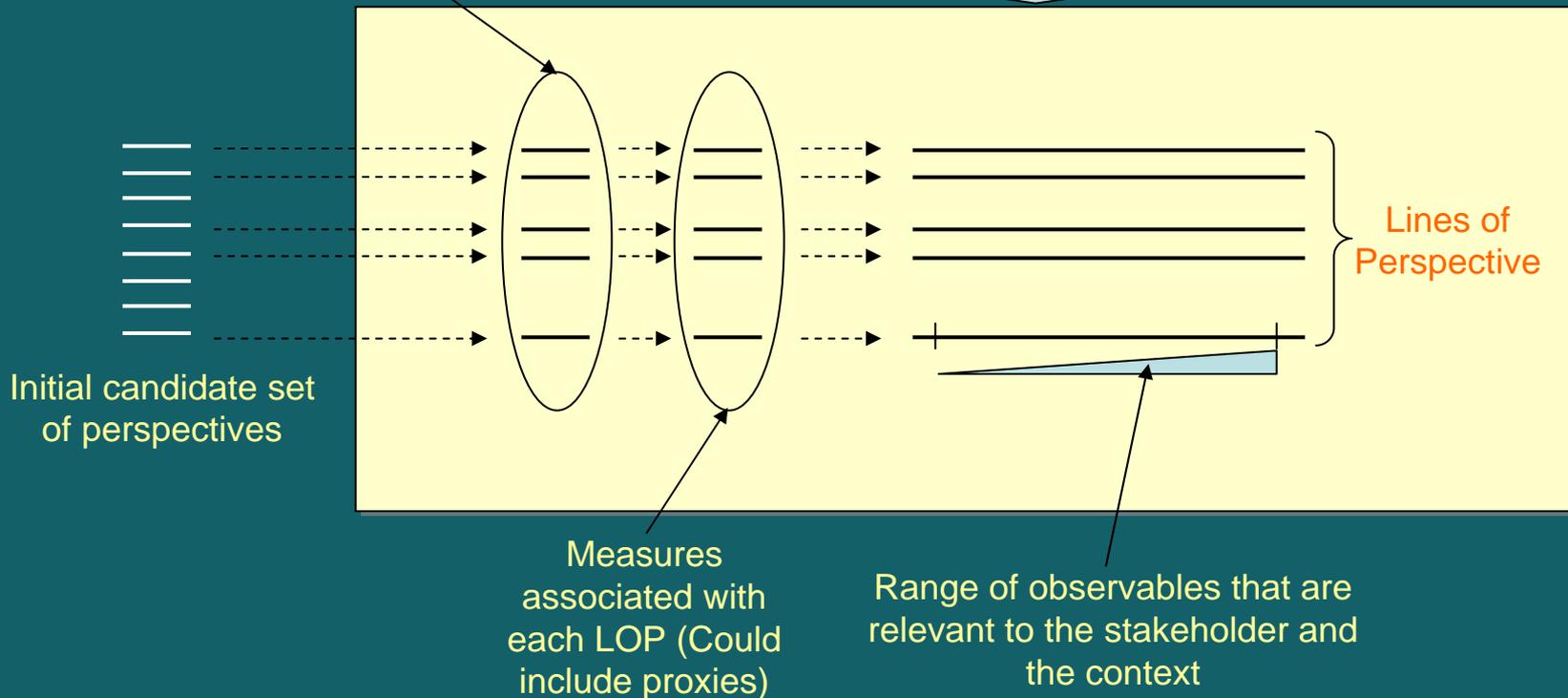
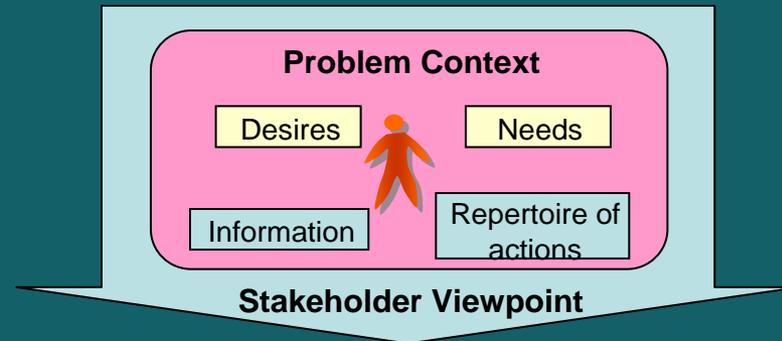


Insights into the situation



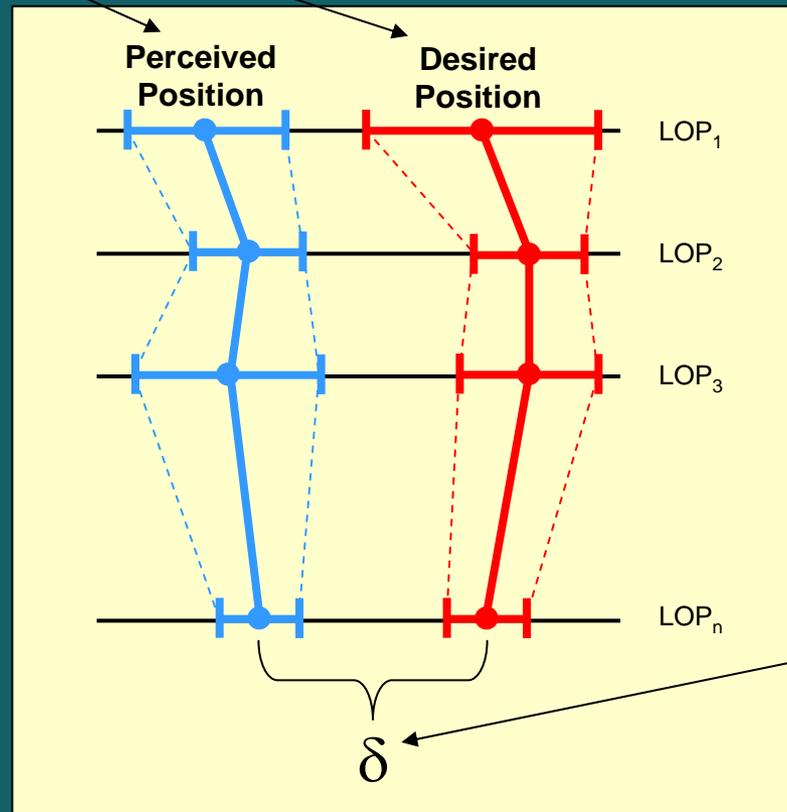
# Perspectives

Perspectives that the stakeholder 'cares about' in a given context.



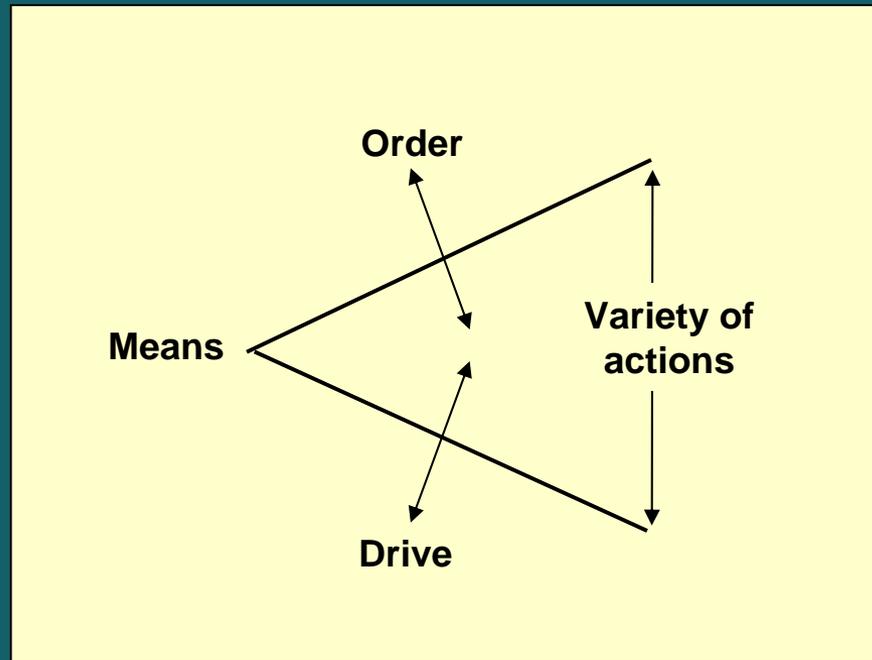
# Positions

Attractors in the perspective 'landscape'



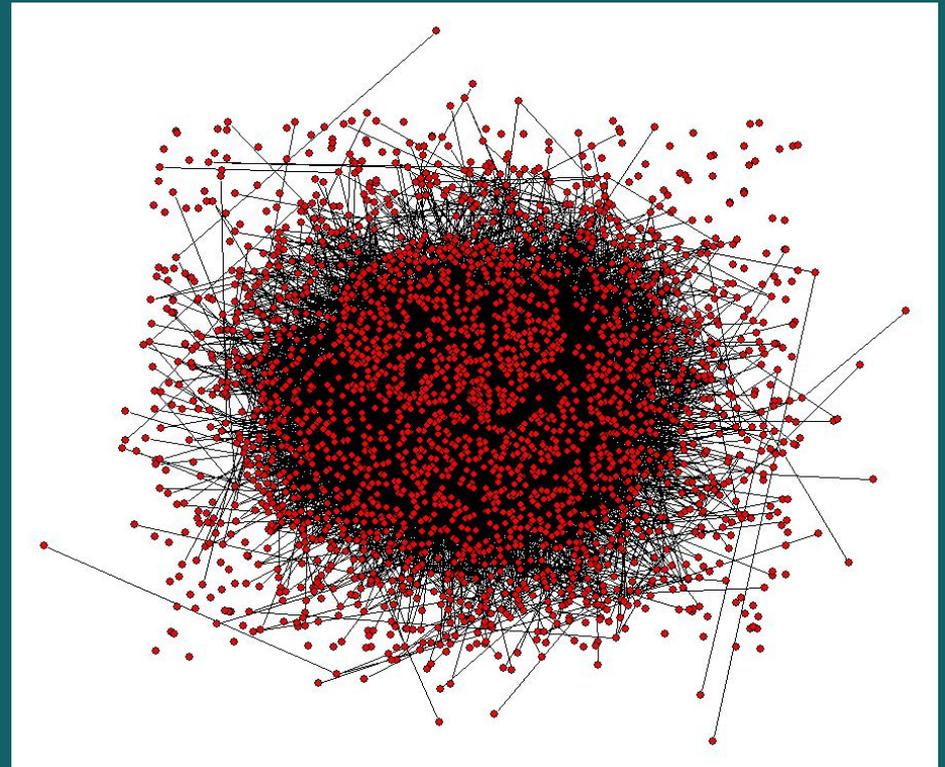
Stakeholder's drive for action

# Towards Repertoire of Actions

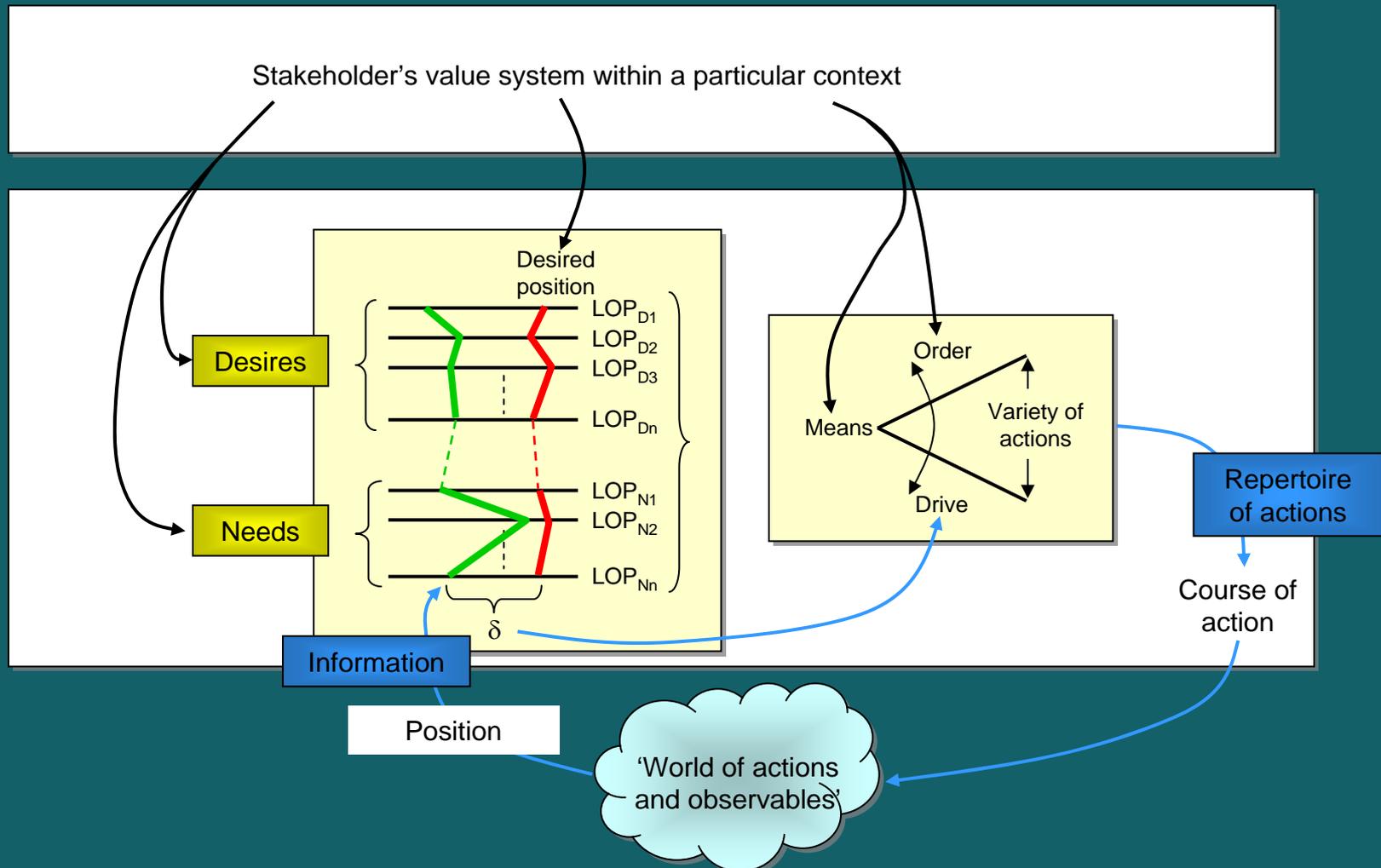


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## The Analytical framework

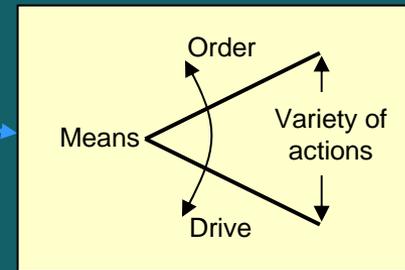
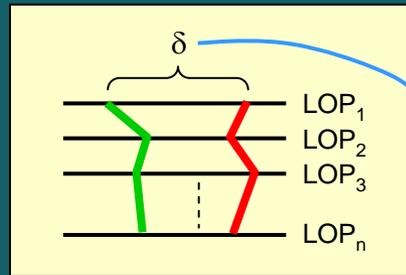


# Introduction to the Analytical Framework: Single Stakeholder



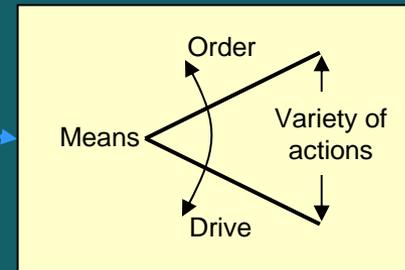
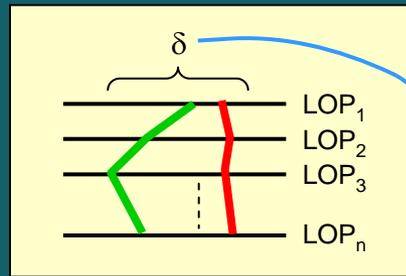
# Analytical framework for multiple stakeholders

Viewpoint:  
Taliban



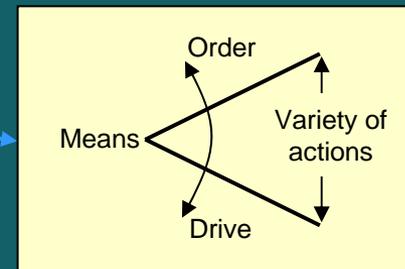
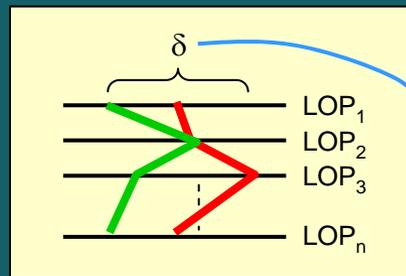
Course of action

Viewpoint:  
Commander



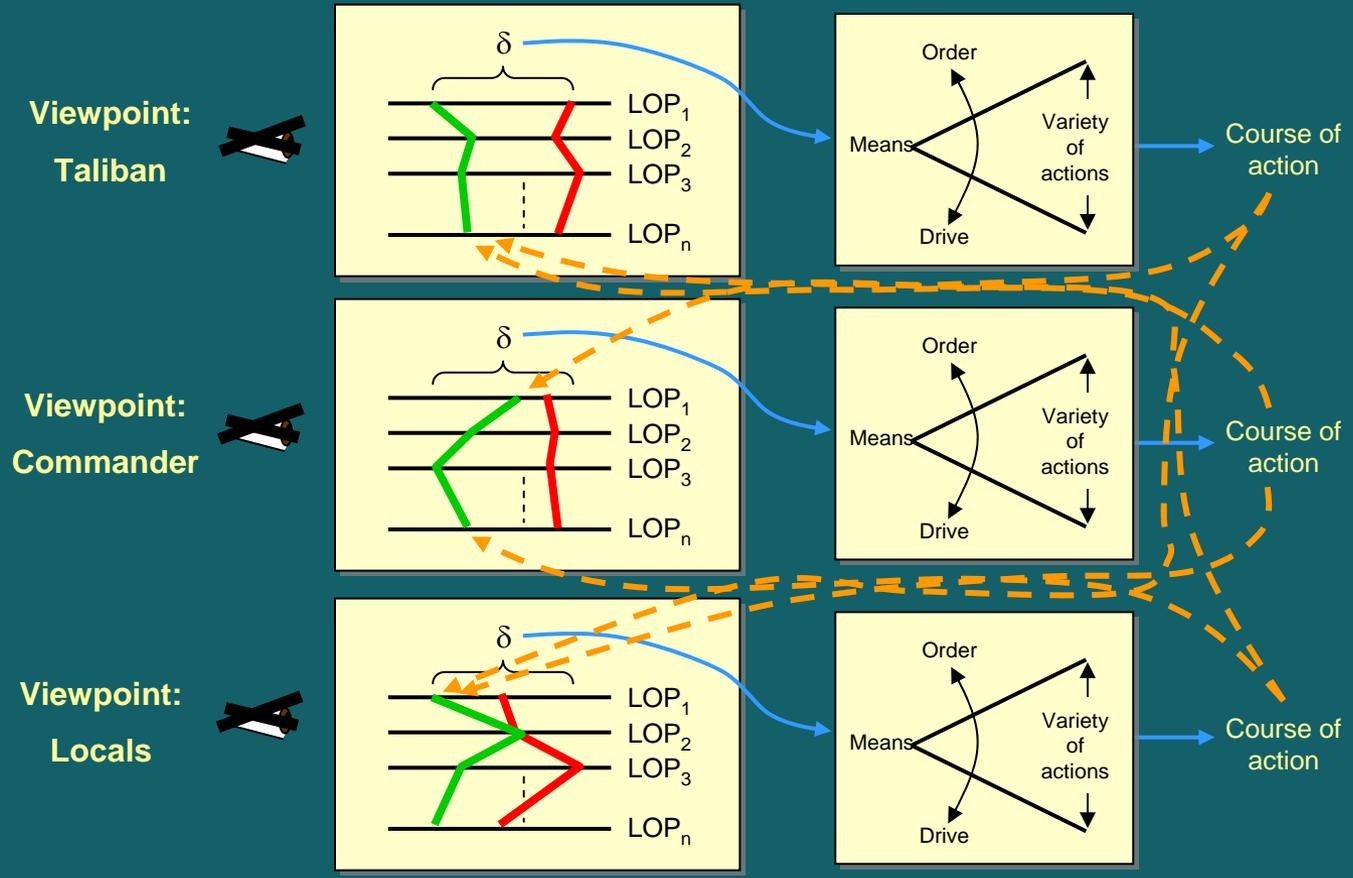
Course of action

Viewpoint:  
Locals



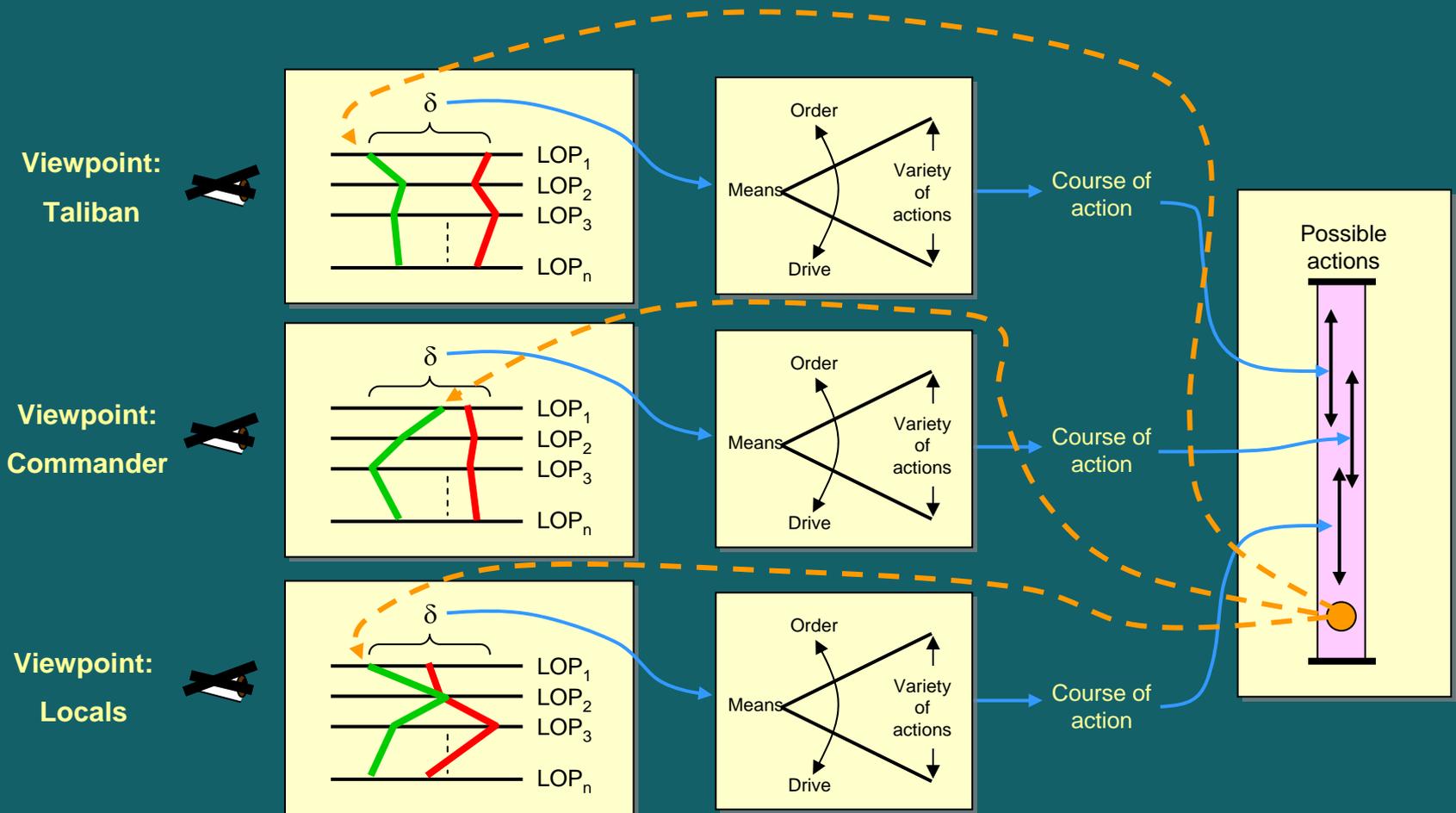
Course of action

# Analysis type 1: Stakeholder impact analysis



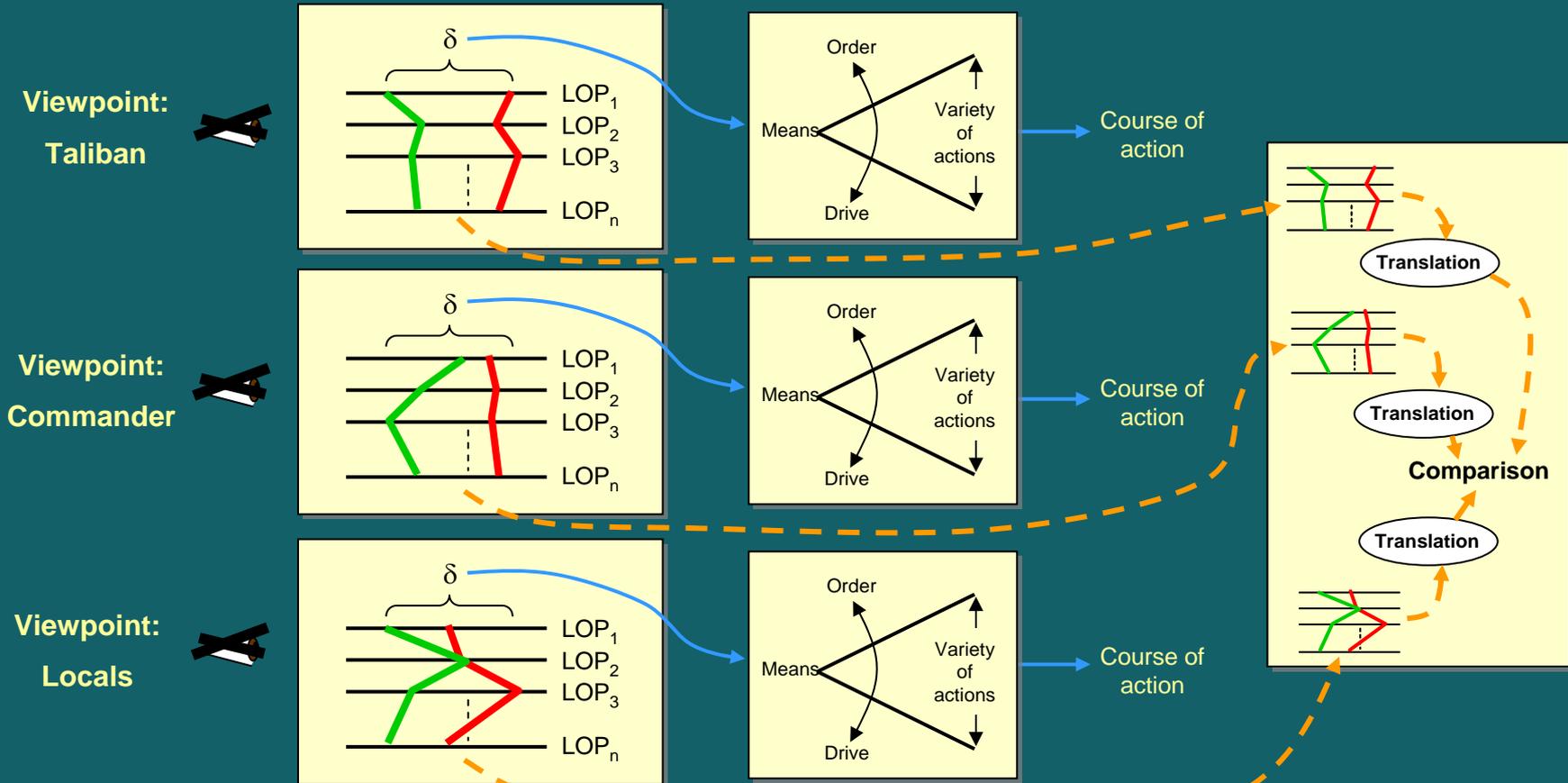
‘If they do that, how might this affect others?’

# Analysis 2: Innovative analysis



'If we do this, how might this affect others?'

# Analysis 3: Cross-framework analysis

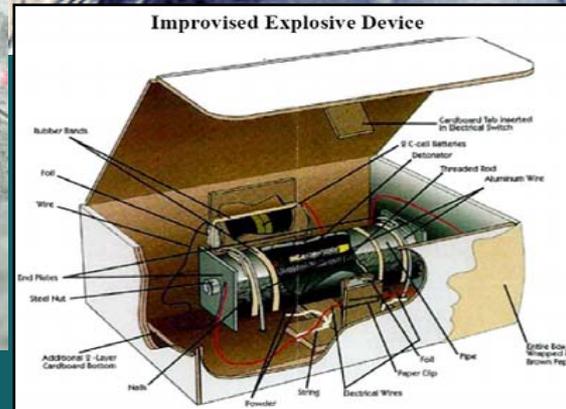


‘How far apart are they anyway?’

# 04

## Illustrative Example: C-IED

### Options for action



# Candidate questions

- Candidate forward-looking "What if?" question:
  - Is it deemed reasonable to pay for IEDs to be handed-in? If so, how much?
- Candidate backward-looking "Why?" question:
  - Why did the number of IED incidents not decrease during poppy harvest in 2007?
- Within our adaptive analytical framework, "why?" questions are very challenging due to the multiplicity of frameworks required.

# Potential Stakeholders for C-IED in Afghanistan

- Coalition Command
- Ordinary Soldier
- **ATOs (ie IEDD operators)**
- Local population (Collateral)
- **Local population (Protection)**
- Bomb operatives (inc. finance & training)
- Afghan forces (inc. police)
- UK Public
- UK Government
- Tribal Elders (inc. District Councillors)
- **Taliban**
- Businessmen (Legitimate)
- NGOs
- Afghan Government
- Businessmen (Non-legitimate)
  - (inc. narcotics/weapons trading)
- **Media**
- UK Analysts (Int. etc)
- ...

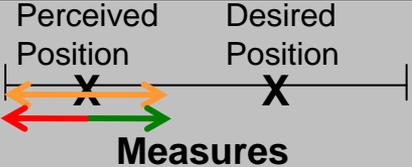
# Stakeholder interests

<b>Stakeholder</b>	<b>What defines main aspects of stakeholder interest in IED.</b>
Taliban	IED as force element
ATO Operator	IED as device to be 'made safe'
Local population	IED as personal threat or opportunity
Media	IED as news-story element

# Context: paying for IED

Stakeholder	What defines main aspects of stakeholder interests in IED	line of perspective	Measures
Taliban	IED as force element	<ul style="list-style-type: none"> <li>• Geographical</li> <li>• Financial</li> <li>• Educational</li> <li>• Ideological</li> <li>• Social</li> <li>• Societal</li> <li>• Technical</li> <li>• Organizational</li> <li>• Political</li> <li>• Operational</li> </ul>	
ATO Operator	IED as device to be 'made safe'	<ul style="list-style-type: none"> <li>• Geographical</li> <li>• Professional</li> <li>• Social</li> <li>• Operational</li> <li>• Technical</li> <li>• Analytical</li> <li>• Organizational</li> </ul>	

# Context: paying for IED

Stakeholder	What defines main aspects of stakeholder interests in IED	line of perspective	
Taliban	IED as force element	<ul style="list-style-type: none"> <li>• Geographical</li> <li>• Financial</li> <li>• Educational</li> <li>• Ideological</li> <li>• Social</li> <li>• Societal</li> <li>• Technical</li> <li>• Organizational</li> <li>• Political</li> <li>• Operational</li> </ul>	<ul style="list-style-type: none"> <li>• <b>No. of regions of influence</b></li> <li>• <b>Level of self-financing</b> <ul style="list-style-type: none"> <li>• number of schools</li> <li>• % signed-up to ideology</li> </ul> </li> <li>• <b>Taliban with referent power</b></li> <li>• <b>Re-established societal control</b></li> <li>• <b>numbers with IED skills</b> <ul style="list-style-type: none"> <li>• % positions of authority</li> </ul> </li> <li>• <b>Degree of Governmental power</b></li> <li>• <b>% reqd operative status</b></li> </ul>
ATO Operator	IED as device to be 'made safe'	<ul style="list-style-type: none"> <li>• Geographical</li> <li>• Professional</li> <li>• Social</li> <li>• Operational</li> <li>• Technical</li> <li>• Analytical</li> <li>• Organizational</li> </ul>	<ul style="list-style-type: none"> <li>• <b>% secure patrols &amp; safe areas</b></li> <li>• <b>Degree of achievement</b></li> <li>• <b>Extent of social knowledge</b></li> <li>• <b>% reqd operative status</b></li> <li>• <b>Extent of device knowledge</b></li> <li>• <b>Amount of support</b></li> <li>• <b>Degree of autonomy</b></li> </ul>

# Discussion of illustrative example

- Limited analysis undertaken has shown that adopting different viewpoints and multiple perspectives has potential for providing interesting cross-stakeholder insights.
- The framework supports a more open and subjective approach to analysis.
- The method helps to open-up inquiry and tries to avoid advocacy – visualisation needs further work.
- It addresses possibility in addition to probability.
- We have not:
  - Covered adaptive aspects of the framework – because we cannot enact.
  - Looked at an extended set of stakeholders.
  - Have not considered the contributory role of traditional analytical methods.

# QUESTIONS?

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