



The Variety Calculus Planning Methodology

An alternative planning concept for complex operations

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Conventional approaches to military planning are unsuited to the complexity of many contemporary tasks and situations

- Deterministic – rely on well-understood chains of cause & effect
- Reductive – tends to generate largely independent lines of effort
- Dependent on a well-defined and definitive end-state

Such relationships and conditions are elusive in complex situation



The Variety Calculus

- Offers an alternative way of thinking about tasks, situations and all aspects of how we organise, plan and act
- Derived from cybernetics theory – ‘the science of control’
- Enables organisation structures, processes, relationships to be calibrated to the nature of the situation

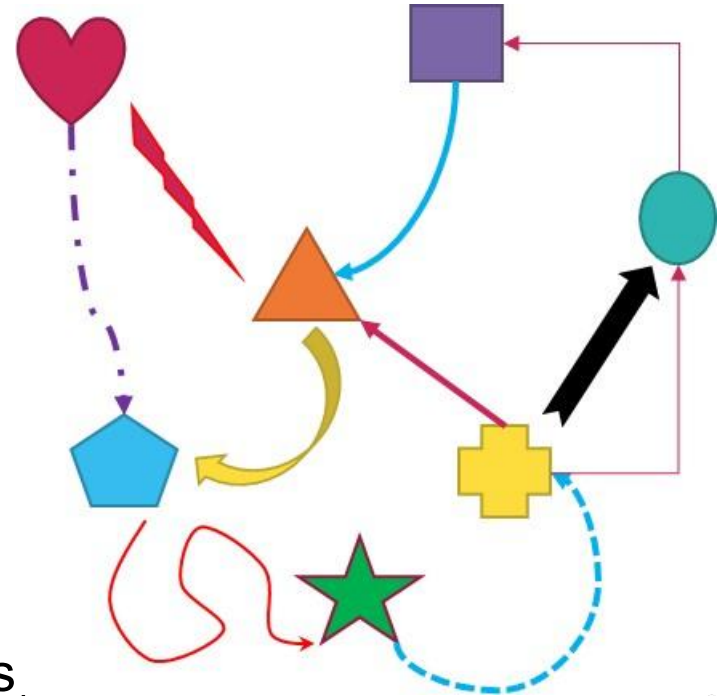


Variety = the number and diversity of components and relationships that compose a system

Variety =

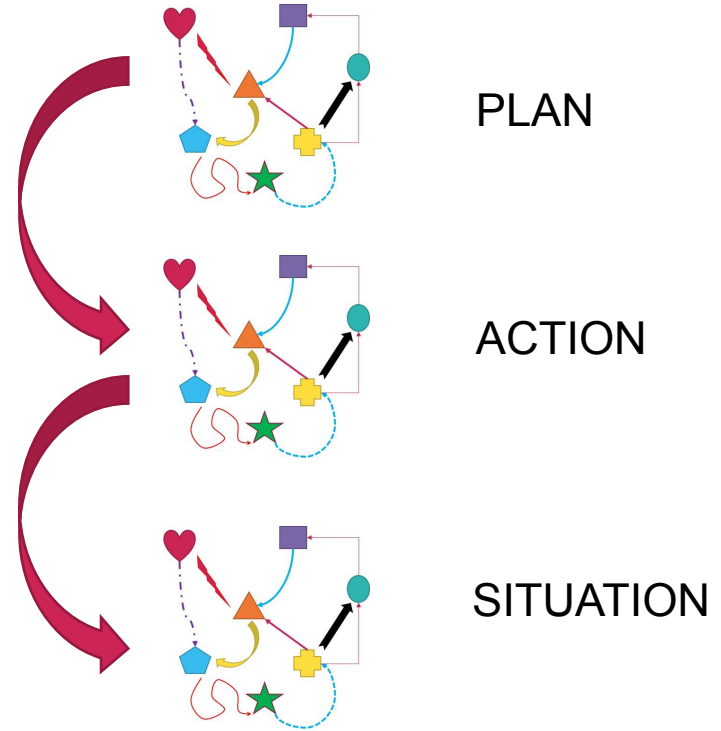
- A measure of complexity
- An indication of adaptability
- The amount of information required to achieve understanding

Operations, operating situations, processes, HQs, adversaries are systems



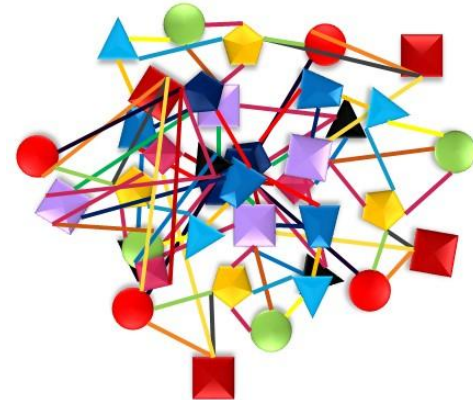
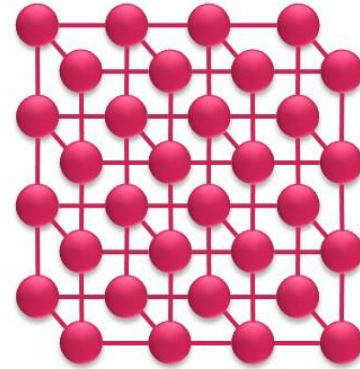
To be an effective controller a system must have at least the equivalent variety of the system that it seeks to control

A plan must be as diverse as the situation it seeks to address



- Simple systems have low variety
 - Uniformity
 - Few components and relationships
 - Predictable
 - Understanding is intuitive

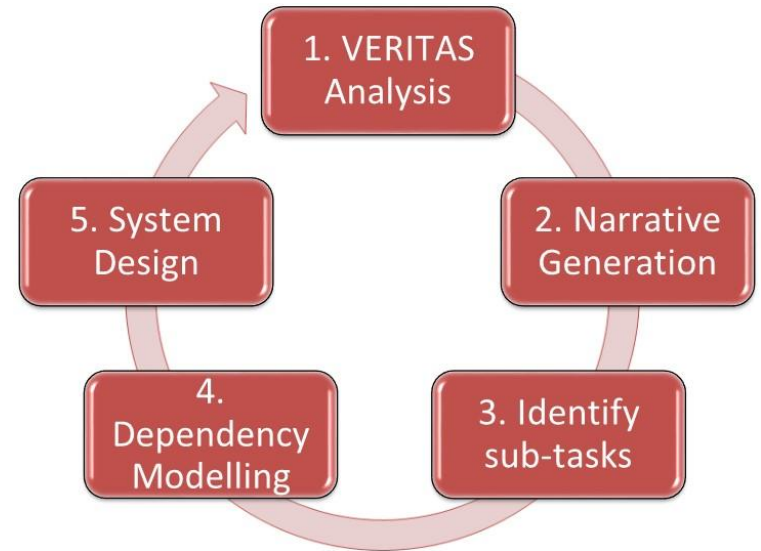
- Complex systems have high variety
 - Diversity
 - Multiple components and relationships
 - Unpredictable
 - Understanding is elusive



- Driven by purpose
- Requisite variety
- Work from high levels of abstraction to low
- Integrate planning & design
- Exploit multiple perspectives
- Diversity of relationships
- Understand connections
- Every action is an experiment



- Starts at a high level of abstraction
- Works iteratively to generate required level of detail
- Designed to engender debate and expose differences in thinking – not quick consensus!
- Each iteration is a 5-step process



- First step is to define task/operation ‘purpose’
- About **why** action is taken rather than **what** action or the effects intended
- Advantage for tasks that have no definitive end-state or where end-state is unknown
- Characteristic of planners, not the environment, therefore definable and controllable
- Resilient in dynamic situations



There are rules to this game...

1. Try to express as a single item rather than a 'shopping list'
2. Pitch it at the appropriate level of abstraction
3. It must be consistent with system role & power to deliver
4. Don't frame it as a solution
5. Don't plagiarise a corporate vision statement or higher directive – think for yourself
6. Ensure the key verb phrase accurately reflects system's engagement with the situation
7. Use qualifiers or modifiers to appropriately bound the Purpose
8. Don't use jargon or assume that everyone shares the same definitions – challenge the meaning of terms
9. Test the statement – does it satisfy all relevant circumstances and exclude irrelevant ones.
10. Ensure it's not a 'political' or 'marketing' statement



- **Purpose** → How are your freedoms limited by decisions already made?
What are your risks & risk appetite?
- **Policy & Constraints** → What assumptions are you making about how stakeholders view the operation? (Any one who affects or is affected by it.)
- **Views** →
- **Environment** → The context/situation – sources of complexity, relationships between factors
- **Relationships** → Who do you need to have relationships with and what should the nature of these be?
- **Information** → What info and sources are relevant?
- **Time** → What time factors are relevant?
- **Agency** → What capabilities, authority, influence do you have/need?
- **Stance** → What does all the above mean for how you want to position yourself?

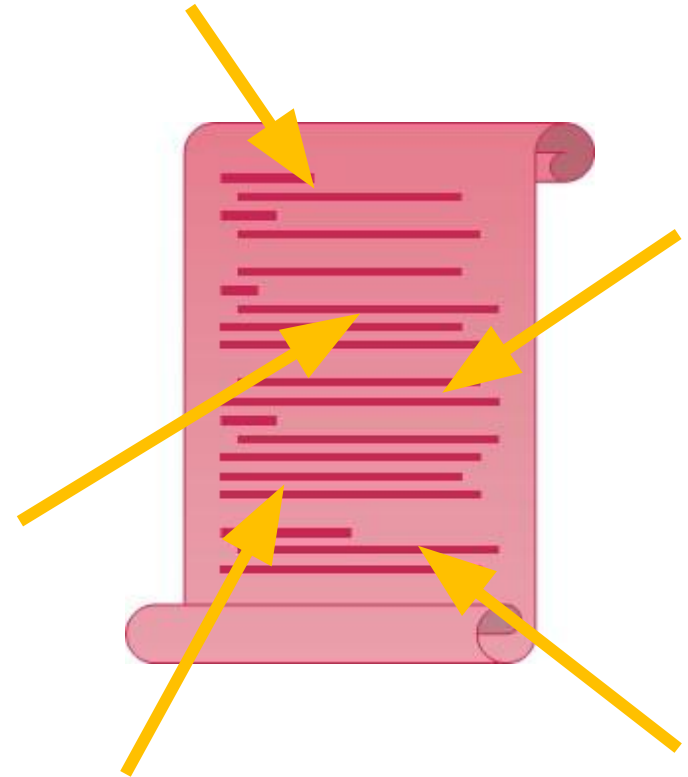


Consolidation of VERITAS analysis into an explicit and concise text description of the situation and your response to it

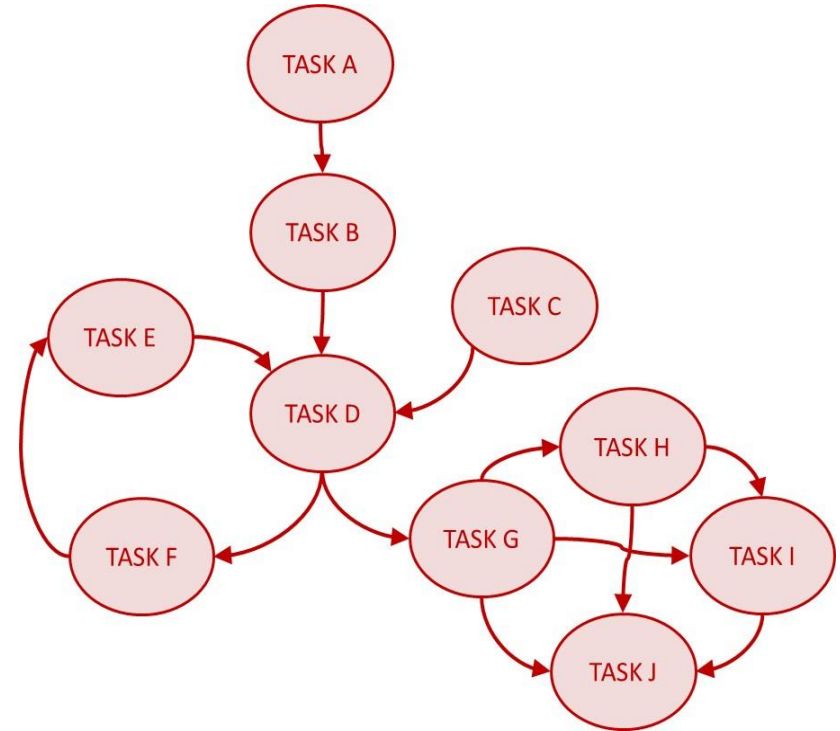
- Provides a check on content of VERITAS
- Useful for communication with superiors, subordinates & peers
- Forms the basis for identification of subordinate tasks



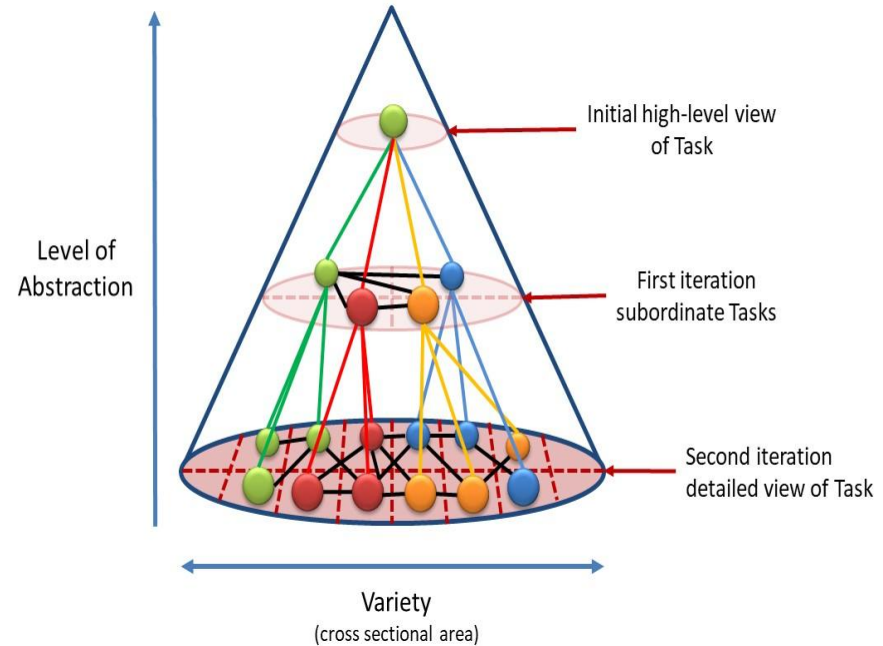
- What is it essential to do to deliver operation Purpose?
- Explicit in or compellingly derived from the Narrative
- Provides access to next level of abstraction



- A network of tasks rather than linear 'lines of effort'
- Checks the coherence of the task set
- Key/influential tasks and subsystems revealed
- Reinforcing and attenuating loops of activity
- Informs organisation design



- Each subordinate task can be subject to the same form of analysis
- Exposes further detail and additional subordinate tasks
- Requisite variety through greater diversity of participation in subsequent rounds
- Coherence maintained through:
 - Relationships identified during mapping
 - Series of purpose statements and narratives from strategy to task
 - Exchange of narratives between related tasks



- A shift from algorithmic to heuristic planning
- Most appropriate for:
 - Complex tasks
 - Initial task analysis
 - Use at strategic/operational levels
- Does not have to be used in its entirety – elements have individual utility



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