

Modelling the organisational behaviour of military headquarters: A social scientist's perspective

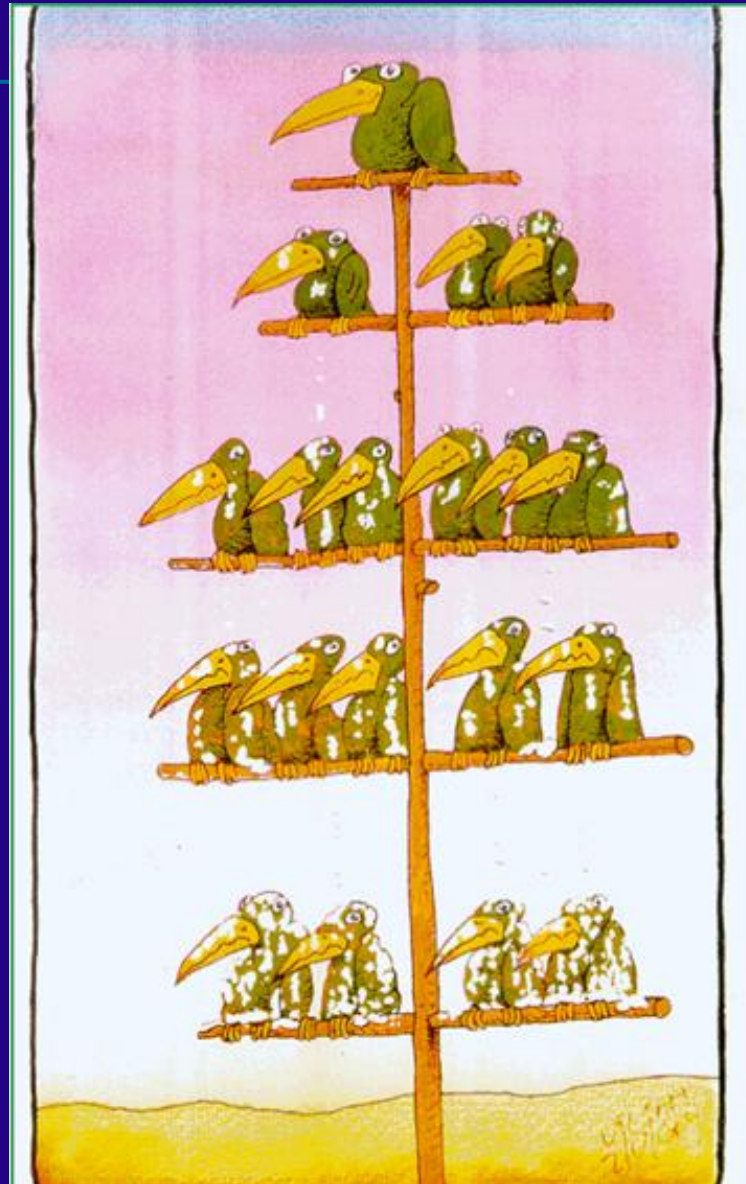
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Overview

- Rationale - why model organisations?
- Representing organisational behaviour - what features are important?
- Existing models of organisations - how do they fare?
- A way ahead

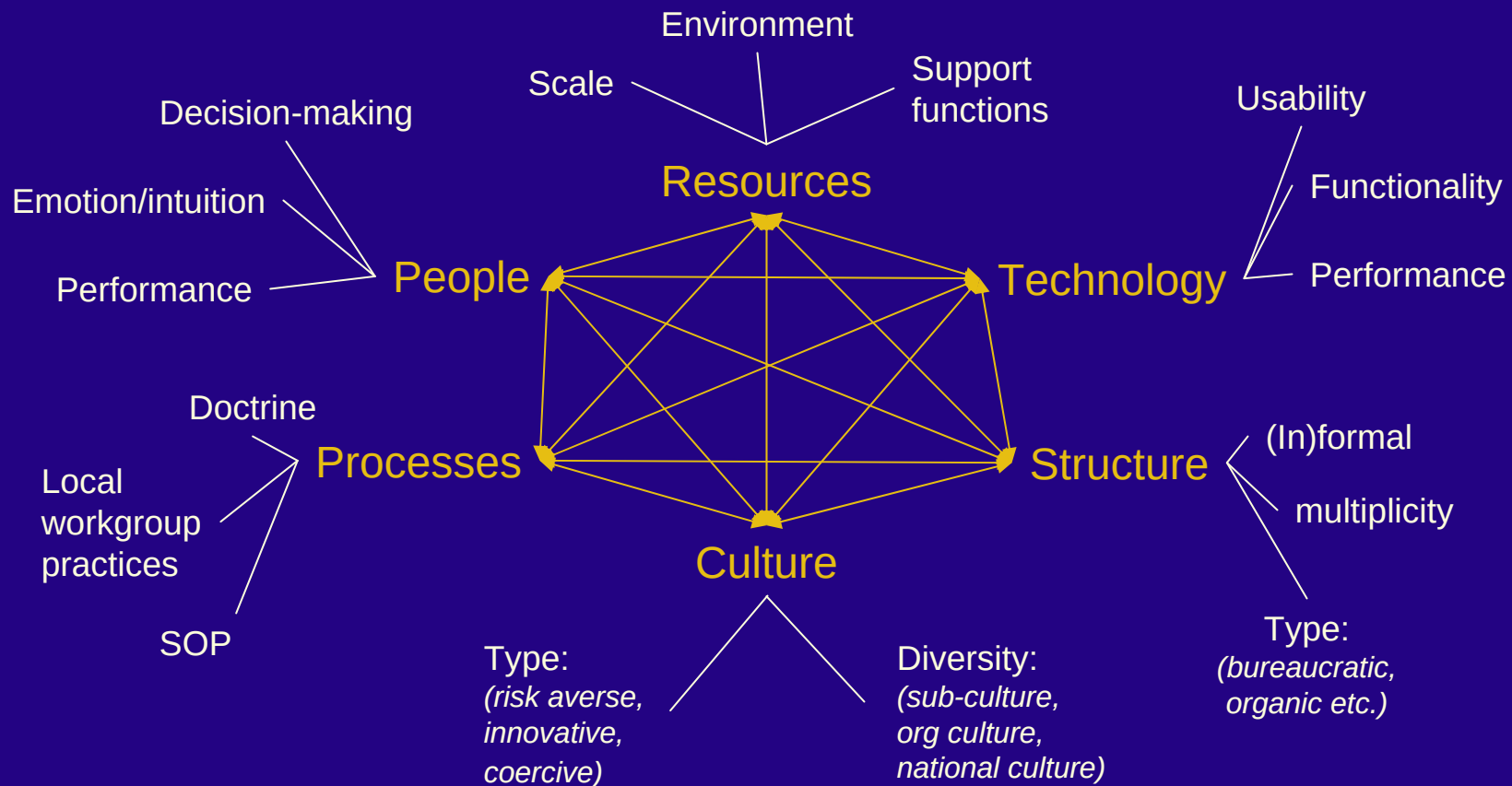
Rationale for modelling organisations

- The social science perspective
 - Correlational and experimental studies only get you so far
 - Simulation modelling facilitates exploration of dynamic systems (theory building, 'in silica' experimentation, organisational interventions)

Rationale for modelling organisations

- The OA perspective
 - Effectiveness of technical systems critically depends on how they are used
 - A level playing field for investment appraisal requires that the most appropriate process and practice for each technical solution be used (e.g. telephone versus e-mail)
 - OA practitioners need to be able to vary parameters that represent key characteristics of organisations, such as processes, as well as technical differences

Organisational components and variables



Simulation models of organisations

- Mission based approach to C2 modelling
- ORGAHEAD (ORGAnisation look AHEAD)

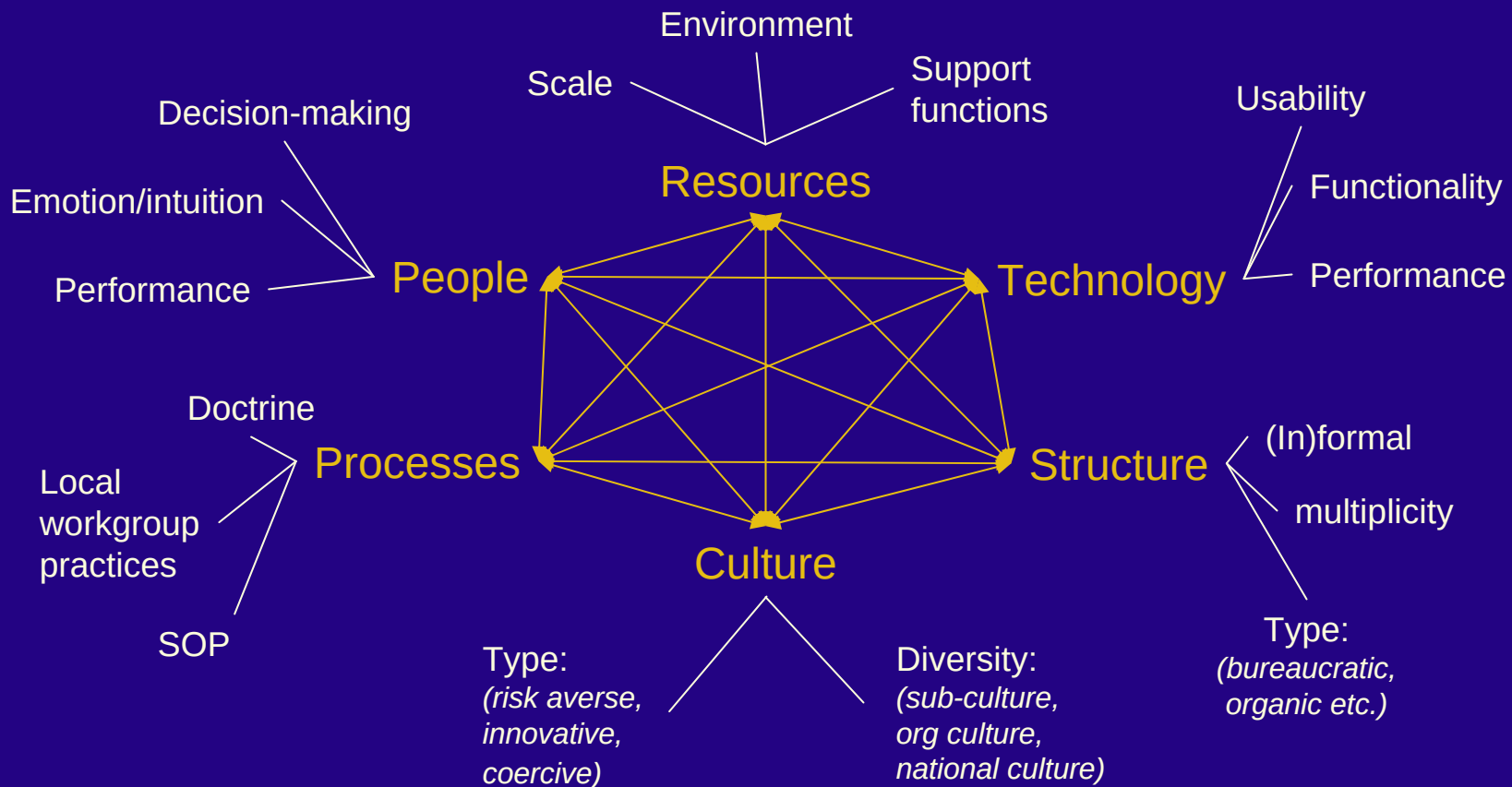
Mission based approach to C2 modelling

- Enables representation of the C2 process to be encapsulated in "agile, fast running simulation models"
- Command agents ($\equiv$ military HQ) interact with each other in order to carry out the command and control process
- Represents two forms of planning: rapid and deliberate
 - Rapid planning representation influenced by the recognition-primed decision-making model
 - Deliberate plan established at the start of the model run. Intention is to use genetic algorithms to 'breed' a number of different plans $\rightarrow$ selection of optimal. If the plan is not working then a plan repair process is activated.

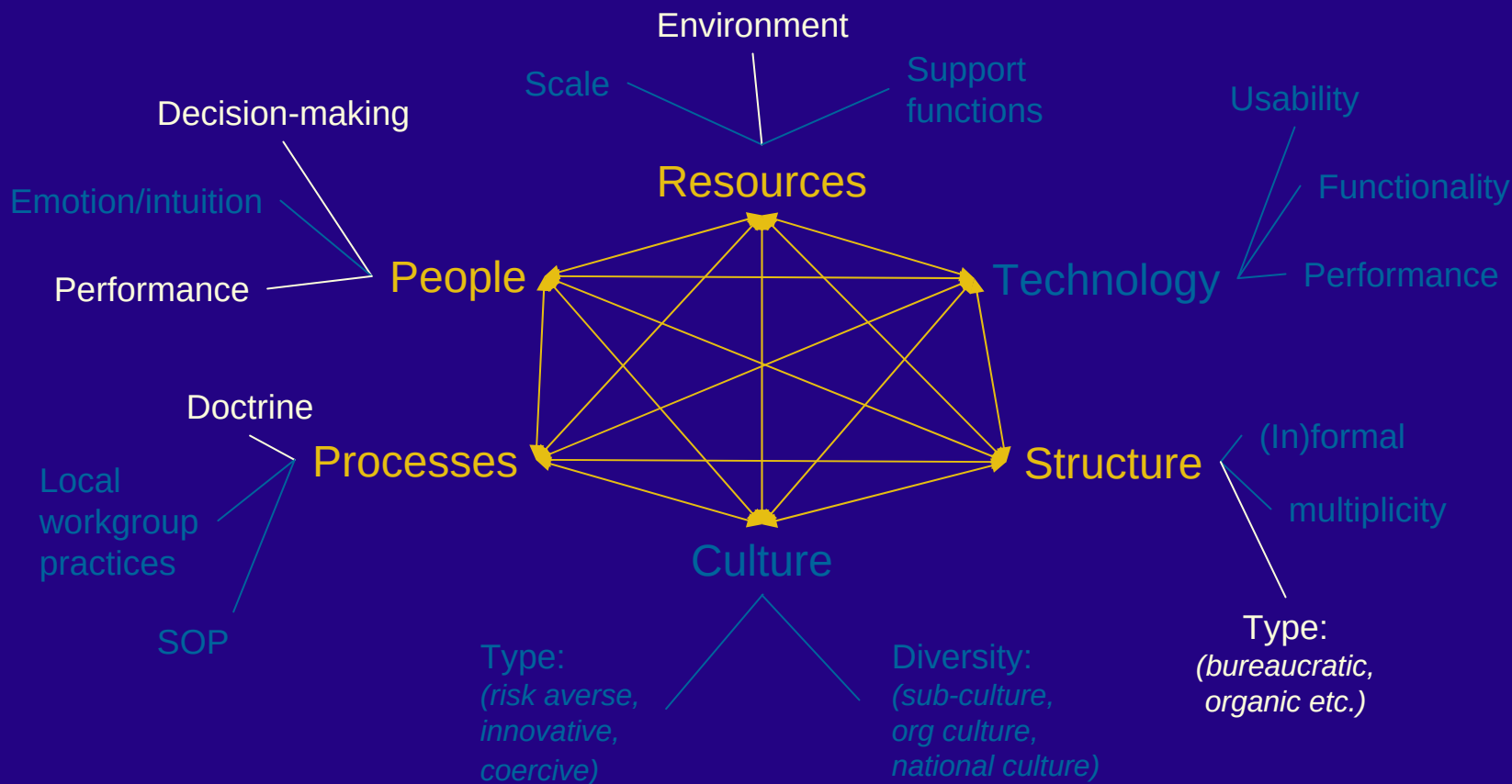
ORGAHEAD (ORGanisation look AHEAD)

- A description of ORGAHEAD:
 - "as in any organization, a task or set of tasks is being done; each personnel member occupies a particular role in the organization, reporting to others, doing tasks, and gaining experience; and a strategic or management function tries to anticipate the future, assigns personnel to tasks, and determines who reports to whom" (Carley, 2000, p. 248).

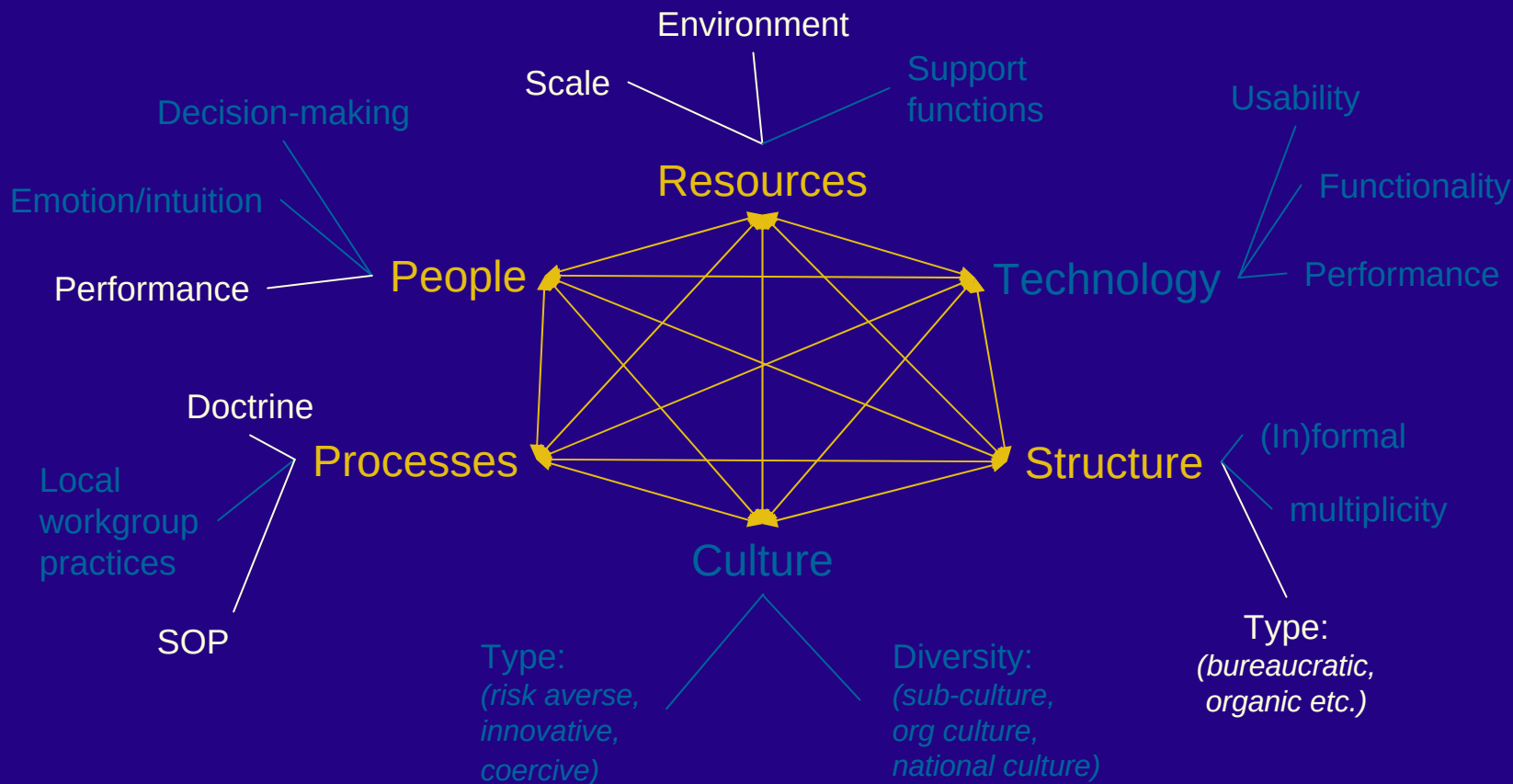
Variables considered by these models



Variables considered by C2 modelling



Variables considered by ORGAHEAD



Improving the quality of representations

- More organisational behaviour variables need to be represented
- Need for complementary modelling approaches
- The organisational behaviour variables considered here could be used as a checklist for model development
- Modellers of organisational behaviour need to draw upon current scientific understanding of the domain
 - consult experts, read the literature, collaborate with social scientists, develop links with social science modelling community



Any questions ?



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