Political Cartography

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Ian Mitchell has worked in Operational Research (OR) since 1988, following a flirtation with accountancy. For the Centre for Operational Research and Defence Analysis (CORDA) he initially produced historical data compilations. Studies of the land battle followed until 1992. After two years as an independent OR consultant to the UK Department of Social Security and European Space Agency he joined the Defence Research Agency (DRA) at Fort Halstead in 1994. He managed the Battle Group War Game, and led infantry studies. He moved to Porton Down in 1998 managing OR studies until 2000 when he became the OR specialist for the Directorate of Equipment Capability, Nuclear Biological and Chemical (DEC (NBC)). Ian served on the Council of the UK OR Society from 1994 to 2000, and elected as Vice-President in 2002. He was commissioned into the Territorial Army in 1984 and was introduced to OR as part of a Business Studies degree during 1986.

John Medhurst joined the Defence Operational Analysis Establishment (DOAE) in 1985, after completing a BA in Philosophy. He worked for a variety of organisations within the UK MOD, including the Fleet Operational Analysis Staff (FOAS), the Headquarters of the ACE Rapid Reaction Corps (HQ ARRC) in Bielefeld, Germany, and the Chemical and Biological Defence Establishment (CBDE) at Porton Down in Wiltshire, acquiring an M.Sc. in Operational Research along the way. When CBDE was brought into the newly formed DERA, he worked for the Chemical and Biological Sector at Porton Down and the Centre for Defence Analysis at Farnborough, being responsible for the Historical Analysis group. In 1998 he left the MOD to work for Landair International Ltd, a small consultancy company with expertise in systems dynamics modelling and GIS applications. In 2001 he set up his own consultancy, Larrainzar Consulting Solutions Ltd, specialising in applying systems approaches to defence problems.

ABSTRACT

This paper is an investigation of the use of mind mapping as a tool for the eliciting of issues surrounding governance. The ability to represent systems of government is desirable for studies to inform decision-makers. The representation of government structures as systems allows experimentation with possible policies. Identification of levers of influence is a

second benefit. What should be represented and how these relate to one another are challenging issues.

Definition of the environmental context, policy inputs government processes and types of outputs of government are based on multiple perspectives. One observer suggested that having been conquered and administered by the Roman Empire was an influence on present day literacy and jurisprudence.

Mapping these views of a System is a useful activity itself but an essential precursor to more detailed models. The aim of this paper is to produce a mind map of the issues affecting governance in the views of delegates of Cornwallis VIII. The paper provides one perspective of mind mapping as an introduction to the technique. It is proposed that a workshop for delegates might use the technique to map the views of the diverse range of communities represented at the Cornwallis meetings.

INTRODUCTION

This paper seeks to initiate an investigation of the use of mind mapping as a tool for the eliciting of issues surrounding governance from the participants of Cornwallis VIII.

Peace Support Operations (PSOs) may be seen as interventions by one system to change the state of another system. The concept of enforced regime change has become a driving issue in 2003. The option to intervene, which Peters discussed in his book 'Fighting for the Future' in 2001, is being taken up.

At the time of writing, in March 2003, one week after the start of the coalition offensive into Iraq, the issue of the government to follow that of Saddam Hussein's regime had received frequent attention in media coverage. The concepts discussed were based on diverse viewpoints and were often neither comprehensive nor coherent with one other. To inform policy decisions, analysis addressing these problems seems to offer potential.

OPERATIONAL RESEARCH

Operational Research (OR), sometimes known in its military variant as Operational Analysis (OA) is about the development of understanding to inform decision-makers. To make decisions without OR support, based purely on judgement is to risk schemes or technological solutions, which do not work in an operational context. The Operational Research method describes a seven-step process to produce understanding for decision-makers. The seven steps are:

- Understand the problem.
- Define the key variables
- Formulate the variables,

- Solve the formula.
- Interpret the results.
- Validate the formula.
- Implement the findings.

Although presented as a mathematically centred linear sequence the method has implied iteration present with much qualitative input. The last three steps of interpretation, validation and implementation define stages of advice provision. The penultimate step, validation, invites further runs through the sequence as understanding of the problem is increased. Issues of understanding and validation bring in qualitative perspectives. This paper is aimed at the first and second stages.

The first step of the OR method, Understand the problem, could be defined as knowing which aspects of the issue matter. This drives the second step of selecting the key variables. How these relate to one another is covered by the third step, formulation of the problem. The ability to represent systems of government is desirable for studies to inform decision-makers. The representation of government structures as systems allows experimentation with possible policies.

SYSTEMS THINKING

In 1999 Cobb described a System Dynamics based representation of Bolivia to the Cornwallis Group. The systems approach remains attractive as a means to represent the key issues within a state such as the law level and its economic health. Selection of those components making up a system is a key step to using this type of representation.

Experience with equipment capability studies has suggested that the initial mapping efforts are both essential to subsequent design of such systems models, but also act as useful products in themselves.

MAPS

Maps are visual representations of key aspects of an issue presented in a structured manner with symbols. The most familiar type of map is that of terrain, often using the Universal Transverse Mercator projection. Mercator's aim was "to spread on a plane the surface of the sphere in such a way that the positions of places shall correspond on all sides with each other both in so far as true direction and distance are concerned and as concerns correct longitudes and latitudes."

As Crane records in his biography of Gerard Mercator (born as Gerard Kremer in 1512), there was from the first a link to politics in the representation of physical space. The representation of Flanders in a 1538 map by Pierre Van der Beke was as much a declaration of independence from the governing empire as a simple representation of places. Mercator

was commissioned to produce a politically survivable map when it was announced that the Emperor Charles V would visit Ghent the following year.

Mercator's patrons needed useful representations of the physical world. Mercator's device of rescaling the lines of latitude progressively provided these. The utility of the Mercator projection is that it allows a navigator to determine what course he needs to set to reach a destination by simply drawing a line on a map. The mind map seeks to represent directly what ideas are relevant to an issue and how these ideas are structured.

Definition of the environmental context, policy inputs, government processes and types of outputs of government are possible. It appears highly unlikely that one observer could provide a truly universal set.

Perspectives of observers are based on their outlooks and experiences. In illustration one observer suggested that having been conquered and administered by the Roman Empire was a positive influence on present day standards of literacy and jurisprudence. Mapping these views of a System is a useful activity itself but an essential precursor to more detailed models.

The remainder of this paper summarises the briefing to and the outputs of a group of delegates of Cornwallis VIII. The resulting mind map shows those issues of most importance affecting governance in their views.

MIND MAPPING

Mind Mapping is a technique for building quick, simple and comprehensible representations of sets of associated ideas. It is based on the work of Tony Buzan and is used by a wide cross-section of people around the world, mainly as an aid to revision and understanding.

Unlike traditional lists and bullet points, Mind Mapping uses visual representation, colour and a branching structure to organise and present information in a way that the brain finds naturally easy to absorb. There are some links between the concept of the Mind Map and the classical Art of Memory as practised by rhetoricians. The mind is better at remembering images, and in particular routes, than it is at remembering words or abstract concepts.

Mind Maps form a useful starting point for building models of problems. Because they are simple and require little or no technical expertise to understand and interpret, they can serve as a common agenda between the analyst, the client and the various interested parties and experts. Although there is a limit to the amount of structure and inter-relationships that can be shown with Mind Mapping, the Mind Map can provide an important statement of the boundaries and nature of the problem, from which more complex models can be developed.

Mind Mapping packages are now available for use on personal computers and these can be used to build quite large maps, representing complex problems. One of the co-authors has used a map to represent a complex Command and Staff trainer specification. The resulting mind maps covered over 16 A4 sheets.

Such Mind Mapping packages also allow the use of clip art and other pictorial symbols as part of the maps. This can be useful in that the choice of such images can provide more information about the assumptions and view of the problem of the person choosing the image than can be conveyed by words alone. Such images provide a background of metaphor and even humour to encourage creativity and lateral thinking.

AN EXAMPLE

This section reviews the views expressed in Mitchell's paper for Cornwallis in 2001 as an example of a systematic outlook with different sets of actors and aims.

The paper and map considered discretionary operations. The fundamental question was the balance between risks; casualties and costs hazarded opposed to the rewards sought from these operations by the participants. The categorisation scheme derived from Maslow provides a set of output states, as one of the classes of reward. The paper recognised four classes of groups, the participants in an operation, its Directors (such as an elected government), Consumers (the electorates) and Reporters, who communicate the course of the operation to the consumers.

Linking these groups with the operation exposed other activities and outputs, revolving around media. The operations such as those in Sierra Leone and Kuwait generate interesting copy for media, increasing audience size for the resulting reportage.

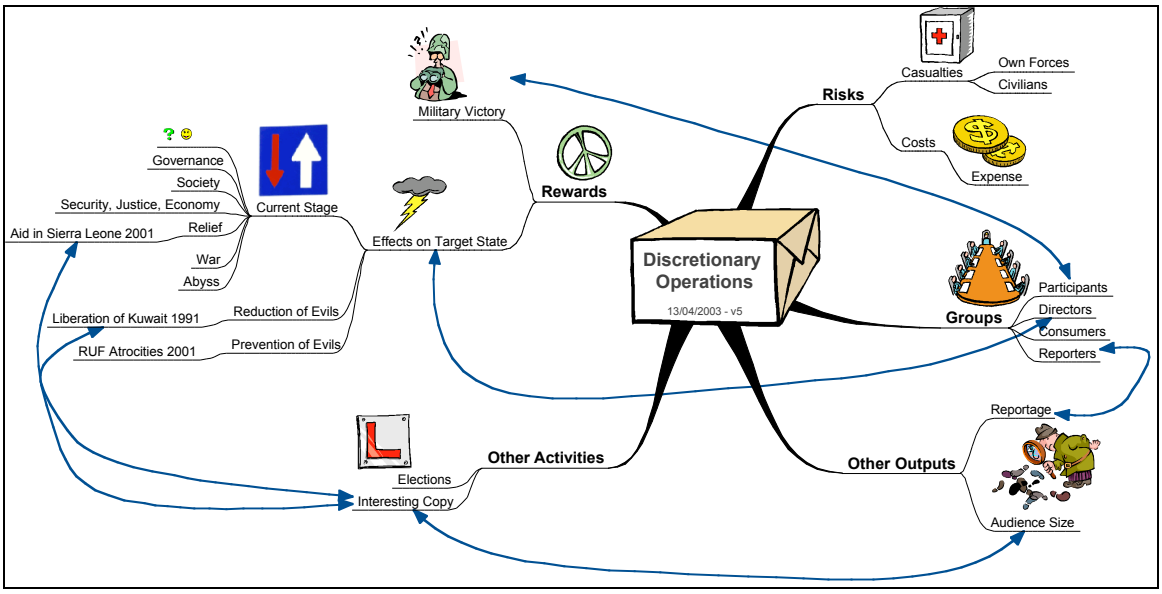

Figure 1: Mind Map of Discretionary Operations Paper.

MIND MAPPING GOVERNANCE AND STABILITY

The Cornwallis Group provides an opportunity to gather together experts in the field of peace support operations, including analysts, academics, consultants, military personnel and

diplomats. The eighth meeting of the Cornwallis Group provided an opportunity to test out this technique within the context of the theme of Cornwallis VIII, the analysis of governance and stability.

A workshop was convened with on-line display using the mind-mapping software of the evolving mind-map. As points emerged from the discussion, the facilitator transferred them to the diagram. The result is shown in Figure 2.

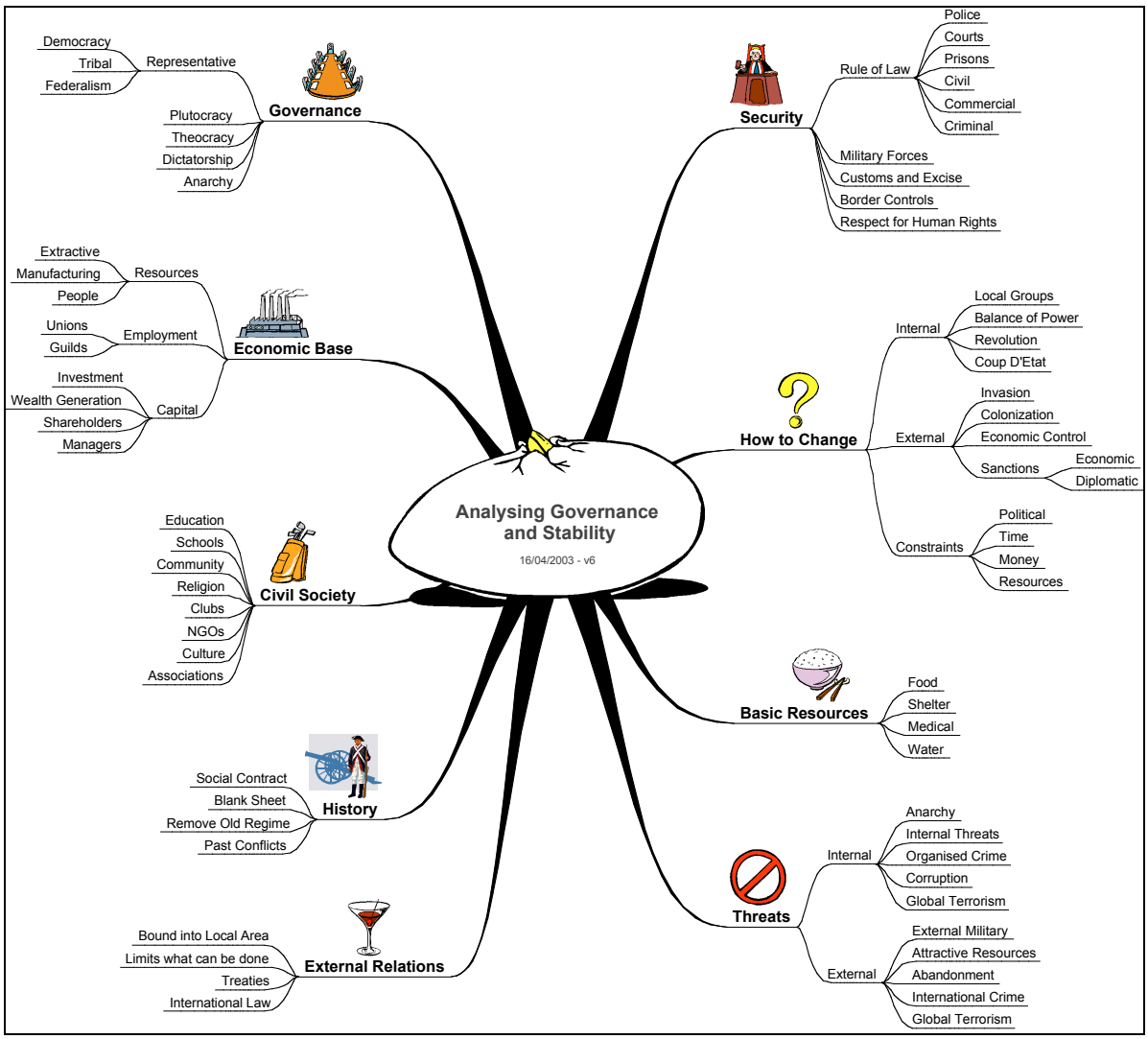

Figure 2: Mind Map of Governance and Stability.

Despite some initial scepticism, it was agreed that the mind map offered a useful method of drawing together and presenting the issues surrounding this very complex subject. Because of the simple nature of the diagram and its accessibility to all of the participants, including those without a technical background, it drew out the issues from the subject matter experts and allowed immediate feedback on the evolving overview of the problem.

Drawing up the diagram took about an hour, with a small amount of time afterward to tidy up the diagram and add some items of clipart. The diagram was circulated to the Cornwallis Group on the following day and some suggestions for small changes incorporated.

TURNING MIND MAPS INTO SYSTEM MODELS

The mind map already shows some of the structure of an influence diagram, showing concepts and the relations between them. With careful thought, relationships of greater complexity can be built up, with the individual elements of the mind map being shown as individual variables within the influence diagram.

The transition between these two representations is therefore a comparatively painless one. Once influence diagrams have been developed, the analyst can then further develop the model into a quantitative representation of the problem, using a systems dynamics package.

This allows a steady transition between a very open way of gathering and ordering ideas and aspects of a problem, and a much more detailed and potentially quantitative representation of the system. Such a system model can be used both to build understanding of the problem and potentially to indicate where intervention may be most effective.

CONCLUSION

The Analysis of Governance and Stability mind map showed that full coverage of these issues lies beyond the scope of a single model. This implies that a set of models would be needed to fully support this area, with a top-level model using the lower level outputs as its inputs.

One of the most difficult parts of any operational research problem is in the initial stage where the analyst must understand the problem and come to some definition of the system in which they are interested. The use of mind mapping provides a potentially useful technique for drawing out expert opinion and communicating a shared understanding of the problem.

ACKNOWLEDGEMENTS

Mind Map ® is a registered trademark of the Buzan Organisation 1990.

REFERENCES

Anderson P. R., 1999. Military Operations Research and Canadian Forces Peacekeeping Operations. In: Woodcock, Alexander and David Davis (eds.): *The Cornwallis Group II: Analysis of and for the Resolution of Conflict*, pages 3-14. Cornwallis Park Nova Scotia, Canada: The Canadian Peacekeeping Press.

Buzan, T. and B., 2000. *The Mind Map Book*, (Millennium Edition), London: BBC Worldwide Books.

Chouinard P. N. and Professor D. Davis, 1999. Force Structuring for Peace Support Operations. In: Woodcock, Alexander and David Davis (eds.): *The Cornwallis Group III: Analysis for Peace Operations,* pages 59-75, Cornwallis Park Nova Scotia, Canada: The Canadian Peacekeeping Press.

Cobb L., 2001, NATIONLAB 1999: Creating a Vision for the Economic and Social Reconstruction of Bolivia. In: Woodcock, Alexander and David Davis (eds.): *The Cornwallis Group II: Analysis for Crisis Response and Societal Reconstruction*, pages 166-173 Cornwallis Park Nova Scotia, Canada: The Canadian Peacekeeping Press.

Crane N., 2002, *Mercator The man who mapped the planet*. London: Weidenfeld and Nicholson.

Mitchell I. M, 2000. Drafting A Bottom Line — Currencies For The Inputs And Outputs Of Discretionary Operations. In: Woodcock, Alexander E.R. and David Davis (eds.): *The Cornwallis Group VI: Analysis for Assessment, Evaluation and Crisis Management*. Cornwallis Park Nova Scotia, Canada: The Canadian Peacekeeping Press

Peters R., 2001, *Fighting for the Future*. Mechanicsburg, PA, U.S.A.: Stackpole Books.

Yates F. A., 1969. *The Art of Memory*, London: Penguin Books.