

Analysis for Evaluation – A Prologue

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Ian Mitchell has worked in Operational Research (OR) since 1988. Commissioned into the Territorial Army in 1984 he encountered OR as part of a Business Studies degree during 1986. For the Centre for Operational Research and Defence Analysis (CORDA) he produced historical data compilations then studied land operations. For two years as an independent OR consultant Ian supported clients in the UK Department of Social Security and the European Space Agency then joined the Defence Research Agency at Fort Halstead in 1994. He managed the Battle Group War Game, and led infantry studies, moving to Porton Down in 1998 to manage force protection studies until 2000 when he was seconded as an OR specialist in Whitehall. From 2004 he supported capability management across domains including naval systems, joining the OR Unit at the Department for Business Innovation and Skills in 2010.

Ian served on the Council of the UK OR Society from 1994 to 2000 and 2002 to 2012, being Vice-President from 2003 to 2005 and Treasurer as of 2007. Ian was a Town and District Councillor as of 2003 and is the Mayor of Amesbury, the home of Stonehenge for 2013. He became Secretary to the Cornwallis Group in 2006.

ABSTRACT

A Prologue summarises a play. The prologue, literally a “foreword”, introduces characters, circumstances for the play and outlines the story to follow.

The eighteenth meeting of the Cornwallis Group took place at the Mason Inn, on the campus of George Mason University. Austere times caused changes of place and date from the intended venue of Costa Rica. For the first time the group met after Easter. The passing of the British Prime Minister Margaret Thatcher prompted much evaluation of her career, particularly her role during the Falklands Conflict of 1982. Preparation for funeral ceremonies dominated news as the Cornwallis Group assembled.

Conflict is ever present but its motives, methods and form change. On the first day of the meeting the Boston Marathon was marred by an explosion. As the Group dispersed the hunt for the bombers was still in full hue and cry with much speculation on their motivation: “Though this be madness, there is method in it”

OVERVIEW

The Cornwallis Group is the “Canadian cousin” of the International Symposia of Military Operational Research (ISMOR). First held at Cornwallis Park in Nova Scotia, whence it takes its name, the Cornwallis Group seeks excellence in analysis. In 2013 the meeting comprised a mix of 21 analysts, academics and diplomats from the UK, Canada and America. **Colonel (retired) Christopher Holshek** opened the single stream of one hour sessions on practice and theory of analysis for evaluation.

“Evaluation” is a loaded term. In conversation such terms have people talk past each other or reach furious accord, where they agree with one another but using slightly different terms over which they are busily fighting. In the UK policy world, “evaluation” is retrospective analysis, looking back at how well a policy has worked, preferably in monetary terms.

Appraisal in contrast happens before the policy goes into action and monitoring begins. Appraisal, monitoring and evaluation should feed into each other as part of the overall policy cycle where the evaluation informs appraisal of the next round of bright ideas for policy. In these terms much analysis called “evaluation” is actually “appraisal”- the fun bit before contact with reality occurs.

Sunday’s Golf showed practical evaluation in action, with the unique allocation methodology for the Random Trophy. The course managers had applied queuing theory. All golfers had to use golf carts, to maximise the throughput and so the revenue. The carts offered a grand lap enhanced, rather than a good walk spoiled.

Small size is part of the Cornwallis Group design to encourage extended debate and discussion. Austerity limited the group to 21 participants, which felt to be just enough during the presentations. **Stan Coombes** asked whether there was **Analysis for Assessment or Assessment for Analysis** of UK Defence Engagement activities. **Dr Neil Verrall** explored **The Road less travelled Challenges to Strategic Cross Government Analysis, Evaluation and Assessment: A Case Study Approach**. Ultimately, evaluation addresses the questions; “What has changed?” and “Are things going in the right direction as planned.

Deborah Cheverton described **Learning from the past: Analysing history to support UK Defence policy**. Following on from Andrew Hossack at previous Cornwallis meetings Deborah presented analysis of history to support policy through mathematical, statistical and other forms of analysis to understand historical engagements, operations, campaigns and conflicts. **Dan Maxwell** led a discussion group on **Value Focused Metrics**.

Arjun Madahar described **Strategic Balance of Investment** for the Strategic Defence and Security Review in 2010 using Mixed Integer Linear Programming. **Dr Allison Friendak-Blume**’s case study **Evaluating an international academic program**, in the African Great Lakes area described the need for sufficient time to

have effect as essential to a realistic evaluation; Networks take time to mature. **Ian Mitchell** ran a **Systems Thinking exercise** with post its and Vensim software, identifying some virtuous circles supporting evaluation. **Dr Richard Hayes** explored **Measures of Merit in Complex Security Situations Insurgency, Terrorism and Nation Building**. The larger wicked problem eludes decision makers who are not thinking through the consequences of their decisions.

Dr Cynthia Irmer considered **Civilian security-a functional approach**; from fighting an enemy to protecting a people implies establishing law rather than making war. With examples spanning centuries **Gene Visco** discussed **Clausewitzian Friction on the modern battlefield, including “battlefields” for the Non-Government Organisations**.

By webcam from her home **Lynne Genik** presented a **Systems Analysis of Community Resilience**, conducted for Emergency Management British Columbia. Workshops used Soft Systems Methodology to surface issues and create a holistic risk management framework for resiliency against three key hazards identified; flooding, wildfire and rockslides.

Mufeeza Iqba, Dan Archibald, Natalia Slain reported on the **Kenyan elections, with Mercy Corps as an organization measuring success in complex operations**. The aim was to address “How do you tell that you are making a positive difference?” in terms of objectives, goals and actions. Wordles can help suggest key terms, but full answers emerge through interactions with the analysts. The machines have yet to displace people.

With the title **Valued Focused Metrics for the Rule of Law – Establishing the Rule of Law in Post Conflict Nations Through the use of a Value Focused Model**, **Ms Jordan Becker** described eliciting an individual’s point of view to identify strategic objectives. **Sasha Kishinchand** addressed **Behaviour as a basis of evidence: The role of perceptions and reactions as the center of gravity for analysis**. Despite many assessment indicators there is little measuring of outcomes or impact. **Duncan Feveyear** discussed **Developing a compelling story for Maritime Acquisition**, engaging stakeholders in appraise potential new mine counter measure vessels using risk assessment.

Margaret Daly Hayes PhD suggested that the new C2 is Co-ordinate and collaborate rather than Command and Control, in her **Latin American Lessons noted in peace operations and disaster response: Towards a framework for regional collaboration, based on** experience of Response in January 2010 to a catastrophic earthquake.

The traditional Cornwallis **Roundtable** followed updates from **The Military Conflict Institute (TMCI) and for 30 ISMOR** to run 29 July to 2 August 2013 at Royal Holloway. Key points were:

- Having both young and grey (young at heart) participants broadens the perspectives of both through the presentation and discussion of the diverse forms of work.

- Meeting at Cornwallis gives access.
- Despite the austerity that depressed numbers to 21 attending from the 30-40 seen previously, the meeting was effective. Cyber links have improved and helped.
- The most engaging sessions had rolling question and answer, which the smaller sized group helped.
- The hour long session is the key aspect of Cornwallis.
- In the current and near future, prioritisation will be a near universal theme for analysts.
- Similar problems exist for evaluation everywhere which are not strictly technical problems: Continuity of sponsorship is the key for good evaluation enabling investment and sustained effort.

The original Cornwallis theme was “Analytic approaches to the study of future conflict”. Both British and Americans will be out of Afghanistan so in a year’s time their defence ministries will be focused on other things. To succeed Cornwallis needs to cover those: perhaps Syria, contingencies and analysis across government with new tools and techniques and data.

The Cornwallis Group recorded a vote of thanks to **Professor Dave Davis**, the Founding and Program Chair as he handed over to Tony Hopkin to close the 18th meeting of the Cornwallis Group. The proceedings of the 18 meetings offer a unique resource on analysis and are on the Cornwallis group website:

<http://www.thecornwallisgroup.org>

SETTING THE STAGE

Cornwallis XVIII ran from 14 to 18 April 2013. The venue was Meeting Room 2 of The Mason Inn, George Mason University, 4352 Mason Pond Drive Fairfax VA 22030.

Colonel (retired) Christopher Holshek opened the meeting on behalf of Dave Davies, conveying greetings and apologies from Ted Woodcock. 18 years ago Cornwallis addressed new problems with new tools. Its genesis was a presentation on network based analysis and Schrodinger's waves by Brian Branson at ISMOR. This prompted thoughts of one hour to consider an issue. Cornwallis has combined discussions of Practice and Theory in its single stream of one hour sessions ever since.

Every year is declared as the last year yet Cornwallis has lasted longer than many administrations, giving a unique perspective on conflict as it has evolved for almost 20 years. Outputs appear on the website with books covering the first 14 sets of proceedings printed by the Pearson Peacekeeping Centre Press.

THE CAST - INTRODUCTIONS

Tony Hopkins worked for the Defence Science and Technology Laboratory (Dstl) Frontline Department for George Rose. Tony's interest has shifted to Balance of Investment. Tony first attended Cornwallis in 2004 and has succeeded George Rose as the UK lead on the Committee.

Dan Maxwell attended the first Cornwallis. He is now an Independent Consultant at GMU modelling Command, Control, Communications and Computing (C4).

Arjun Madahar of Dstl had interests including Cyber Security and Value for money. Stan Coombes with Tony and Arjun has conducted 3.5 years of strategic analysis in Dstl.

Gene Visco declared himself as an "ancient analyst" having worked in OR as of 1956 with many years for the Deputy Under Secretary Army (OR) in Defense until 1997. As of 2005 he has resided in Florida and as of 2009 has worked for Lockheed Martin. He is a long serving member of the Cornwallis Committee.

Paul Chouinard has moved from NATO Defence Planning to Canadian Home Security, officially covering psychological resilience. He is a member of the Cornwallis Committee.

Cynthia Irmer from the State Department Office for the Co-ordination of Reconstruction and Stabilization (SCRS) is interested in reconstruction conflict prevention and analysis.

Neil Verrall is a psychologist with Dstl, with 14 years experience, including OA in Iraq once and Afghanistan thrice. This is his first Cornwallis. He has interests in strategic communications and conflict prevention.

Jan Osburg was also attending his first Cornwallis. He works at RAND on village stability operations for US HQ.

Deborah Cheverton from Policy and Capability Studies, Dstl Historical Analysis and attended Cornwallis once before, in 2010.

Duncan Feveyer has spent 15 years at Naval Systems Department, Dstl. This is his second Cornwallis, having previously attended in 2002 in Nova Scotia. He wanted to describe a problem in the maritime domain to gain external views.

George Rose, now retired, spent several years in OR. Whilst in Washington in the early 1980s it was suggested that he seek a place at the Defence Operational Analysis Establishment. The 1990s saw a new era as he moved to NATO and the Operational Analysis (OA) Branch, which conducted Bosnia assessments. He was seconded to the Front Line Department, worked in Kosovo, and then supported the MoD Strategic Defence Review. He is interested in new tools and techniques, and is a committee representative. Active in Military Operations Research Society (MORS) George was

their first member from overseas. His question for Cornwallis XVIII is “Do we just keep doing what we have been?”

2013 marked Margaret Daly Hayes’ third appearance at Cornwallis. Her background includes the US Senate, CNA Regional defence studies, Strengthening defence analyses and Latin American Multi-dimensional defence. Dick Hayes, from the Georgetown School of Foreign Service studied malpractice of OR in field. The challenge is how to measure the results of moving into the messy parts of the world.

METHODS

Analysis for Assessment or Assessment for Analysis. Stan Coombes considered UK Defence Engagement (DE) activities, whose objectives include defending the UK Overseas territories and interests, protecting UK Citizens abroad, and influencing in support of UK national interests. The challenge is to measure the effect of DE to decide “How should we prioritise DE activities?”

Success occurs over a long period but failure happens in the short term. Traditional Measures of Effectiveness (MoE) will not suffice. Presumption exists on activities generating the outcomes. Good Indicators at the right level provide what information is required to know whether the outcome output has been achieved.

Stakeholder buy in demands simplicity and ease of use in the analysis products. Quick wins are attractive to politicians in power on that day. Whilst the use of survey and proxies for analytic purposes can offer a measure, such quick "wins" can become a dangerous distraction.

The Road less travelled: Challenges to Strategic Cross Government Analysis, Evaluation and Assessment: A Case Study Approach from Dr Neil Verrall. The original aim was to develop Measures of Effectiveness (MoE) for Strategic Communication (STRATCOM). Monitoring and evaluation are never mentioned and there is confusion of analysis, assessment, and evaluation. Ultimately, the questions addressed are “What has changed?” and “Are things going in the right direction as planned?”

High level leaders often see total figures with neither caveats nor error bars. The balance between analysis and action is a fine one and shifts with circumstances. In the 1990s there was much analysis for limited action. The 2000s had lots of action and limited analysis. Very little trend analysis occurred in either decade.

The Joint Analysis of Conflict and Stability (JACS) approach merges data to define what success will look like. The JACS methodology is not PhD type science but remains useful. Fancy analysis is not always needed to recognise a quagmire before falling into it.

Deborah Cheverton Policy and Capability Studies described **Learning from the past: Analysing history to support UK Defence policy**

Andrew Hossack has presented the use of the analysis of history to support policy to previous Cornwallis meetings. Historical Analysis is the use of mathematical, statistical and other forms of analysis to understand historical engagements, operations, campaigns and conflicts for the purpose of providing impartial analyses and sensitive decision support to policy makers.

The 1982 Falklands War provided data for David Rowlands' work on adjusting predictions. Participation rates are the key at the tactical engagement level. Availability of data from Falklands Islands led to budgets that led to work.

Tactical data eg log books are not always available (and may not be created) in Afghanistan, for either the Afghan National Security Forces or the Taleban. There are terabytes of documents but these are not sensibly arranged, even if they are accessible. The exponential increase in unstructured data and information floods the capacity to assess and disseminate. War diaries and post operation reports are the main operational data sources.

Military and Political aspects have both to be modelled, understanding conflict as a system rather than a series of isolated incidents.

Dan Maxwell led **Value Focused Metrics - A discussion Group** 1992's "Value Focused Thinking" by Ralph Keeney is the root source for the approach whose underlying principles have not changed, although the tools now allow far more complexity to be addressed. Value Focused Metrics elicit, define and record underpinning assumptions, using 3 lenses or views; Narrative, Hierarchical and Network.

Surprise results coming from a model mean one of three things-the model is wrong, a factor is missing or that a Eureka moment is taking place. The narratives help pick between the three, especially the timeline view. Some people love the graphic and others the narrative.

For **Strategic Balance of Investment** **Mr Arjun Madahar** saw that adjusting the forces within the costs was "the key thing." The Studies Analysis Group (SAG) provided 60 scenarios in 2008-2010 representing a broader problem base. Mixed Integer Linear Programme was used to generate minimum cost constant effectiveness in these. The Strategic Defence and Security Review (SDSR) of 2010 had policy changing impact and very fast turnarounds for analysis. Reporting in August 2010 it prompted changes to investment, capability and concurrency requirements, resulting in the Adaptable Britain posture.

Dr Allison Frenck-Blume reviewed **Evaluating an international academic program**. The Great Lakes Program (GLP) comprised 10 universities in Africa using Curriculum Development workshops across senior and junior groups. Much energy was demonstrated but there was inability to translate personal initiative to institutional mechanisms. The time allowed for impact assessment to have effect was far too short to be realistic. Networks take time to mature.

Ian Mitchell facilitated a **Systems Thinking exercise with post-its** leading audience participation in an interactive exercise. Causal Loop Diagrams are useful tools to develop mutual understanding amongst diverse stakeholders. The group developed a view on a set of positive influences on successful evaluations.

Dr Richard Hayes described **Measures of Merit in Complex Security Situations Insurgency, Terrorism and Nation Building**. Insurgency is an organized movement aimed at the overthrow of a government through the use of subversion and armed force. Sovereignty is control of territory, with a monopoly of coercive force. Terrorism is the calculated use of unlawful violence to inculcate fear and change society. Not all terrorists are insurgents. Long term success needs short term survival so insurgency, terrorism and nation building are often inexorably mixed. Political will for the long haul is the problem.

Dr Cynthia Irmer described **Civilian security a functional approach** Five years ago in Vienna Cynthia Irmer introduced ICAF for the State Department. The current aim is to build and oversee one coherent capacity within State that promotes stability and security in conflict-affected areas. Beneficial response requires shifts in perception from States to Individuals and from fighting an enemy to protecting a people.

A systems concept is needed to link bureaus and offices to an overall strategy. Human Rights and Counter Terrorism need to talk because they have different and possibly clashing perspectives. There is no strategy but rather various lists of objectives. The key variable is Trust.

“BASIS FOR DECISION” – THE WAR GAME

Ian Mitchell gave a screening of part of the 1964 BBC documentary on Operational Research, “Basis For Decision”. In Episode 2 “Playing It Through” Ronald, later Professor Ronne, Shephard introduced the war game in use by the Army Operational Research Group (AORG) at West Byfleet.

The name Operational Research fell out of defence use due to organisational change so OR stood for Operational Requirements and Operational Analysis (OA) became the term for military OR. War games have remained valuable tools in OA because they offer means to represent those decisions which defy codification.

FRICITION

Clausewitzian Friction on the modern battlefield (including “battlefields” for the NGOs) was **Mr. Gene Visco’s** subject. Murphy’s law restates Clauswitzian Friction: “If something can go wrong then it will”. Sir Michael Howard mentioned the unpredictable reaction of the adversary, which is one of the major problems that war presents to Analysis: We do not understand the synergies. There are inadequate tools, insufficient data, and incorrect interpretations of what data exist.

Reality is fouled up to various degrees because war is a human endeavour, with machines managed by people. In 1831 Clausewitz described “A kind of friction that is inconceivable unless one has experienced war.” The difference in degrees of friction between friendly and enemy forces can determine the outcome. Friction of Peace exists as well as that of war.

PERCEPTION AND MOTIVATION

Lynne Genik DRDC Centre for Security Science **Systems Analysis of Community Resilience**, described support for communities by Emergency Management British Columbia from 2008 to achieve its objectives by demonstrating value of scientific approach. There was a lack of frameworks and concepts of operation, so very little co-ordinated activity occurred.

Lynne ran a Systems analysis of community resilience, reapplying the Saint Pancras railway station study by Serco UK to community planning in Canada. Heavy and increasing reliance exists on interdependent systems and so the risk of cascade failures increases. Resilience depends on inherent resilience of infrastructure elements.

The study used SSM for a holistic risk management framework for resiliency to crisis events. Three key hazards identified were flooding, wildfire and rockslides. Community Perspectives vary: First nation relied more on traditional skills so were more independent than the rural communities. Villages depend most on outside help. Utility of SSM was in its ability to surface these issues.

Mufeeza Iqbal (Pakistan) Dan Archibald , Natalia Slain USMC to diplomatic service, described **Measuring success in complex operations**, taking the **Kenyan elections, with Mercy Corps as an organization**. The challenge was how to evaluate the handling of electoral violence in Kenya with Keeney's theories of VFT. In Kenya the 2007 election was contested between Kibaki and Raila Odinga resulting in 1,500 killed and 300,000 displaced. Voting is usually ethnic based so protests easily transform into inter-ethnic violence. The Mercy Corps program aims to alleviate poverty and manage conflict. The challenge was “How do you tell that you are making a positive difference?”

The election co-incident with devolution so large commercial incentives arose. Ethnicity, poverty and political manipulation of youth, who are angry, disaffected and affordable so are ready to riot, are all factors that make for conflict.

Key terms emerge that show what the organization is interested in in terms of objectives, goals and actions. Wordles developed the lists. Initial structures were very different from the three students' perspectives. The aim was in fact a sustainable peace rather than just to avoid violence during the election.

Valued Focused Metrics for the Rule of Law – Establishing the Rule of Law in Post Conflict Nations Through the use of a Value Focused Model.

Ms Jordan Becker described representing the views of the Stimson Center's Bill Durch, by obtaining high level objectives through asking why and how questions to identify the pieces of a VFT Model on the established rule of law. A lot of means objectives exist. Host nation political will was important but awkward to obtain.

Ms Sasha Kishinchand considered **Behaviour as a basis of evidence: The role of perceptions and reactions as the center of gravity for analysis.** From 2003 to 2007 in Iraq the authorities have used various methods. In 2006 USAID used Drivers of Stability for Yemen. F-indicators are the official US State Department foreign assessment indicators: these have some 6,000 outputs, covering neither outcomes nor impact but here to stay. USAID uses the Tactical Conflict Assessment Framework (TCAF) that was created in 2004 as a basic framework of preliminary response mechanisms for military and civilian response teams.

There is a difference between correlation and causality. Theory of Change is often disconnected to the stated mission strategy, results framework and related indicators. It is helpful to get in first to establish the strategic objectives and agree these with the operators. Understanding the problem is essential: what works with violent extremists may not with fundamentalists. Analysts need human terrain systems that are based on perceptions, especially the local perspectives.

Duncan Feveyear spoke on **Developing a compelling story for Maritime Acquisition**, bringing stakeholders along. Maritime Policy gives context to three different types of maritime capability; Maritime mine-countermeasures, Hydrography, the studying of a column of water, and Patrol, which is loosely defined. To acquire a viable capability requires consideration of Duty of care, and the Defence Lines of Development particularly Training, Organisation and Equipment Capability.

Mines have hit more ships than every other weapon put together. There are many types of mine. Analysts are good at detailed analysis of single vignettes – eg Probability of Detection (P Det) from particular equipment. The Mine Counter Measure Vessels are the best in world if they are in the area of operations but there are problems in getting them there and communicating with them when they are there.

Mission analysis may be “not really new” but was usefully applied here. A generic vignette tree covered transit time, and links probability sources. The conclusion that there was a 35% probability of success for the operation had some impact on the customer, showing the consequences of a capability that had been left to wither.

History suggests that mining is a material risk to operational success. Japanese merchant ships were savaged during World War 2. In August 1945 5% of B-29 sorties were used to mine thousands of sea miles. The USN USAAF RAAF RCAF conducted Operation STARVATION very effectively. This was classified until the 1950s so may be suitable for historical analysis.

Margaret Daly Hayes PhD noted **Latin American Lessons in peace operations and disaster response: Towards a framework for regional collaboration**

The new C2 is “Co-ordinate and Collaborate”, replacing “Command and Control”.

In Haiti violence in February 2004 led to a Chapter VII operation authorised by the UN. This sought security in cities, protection of vital institutions, to facilitate security on highway roads, dissuade and stop violent armed groups and criminals, and defend access to the humanitarian infrastructure.

On 12 January 2010 at 1653 a catastrophic 7.0 earthquake occurred. 14 of 16 ministries and most communications were destroyed. Rubble from collapsed structures blocked access and the airport was closed. The prisons were evacuated and many prisoners escaped. Hospital system lacked power.

Food and water arrived by air at first. Lack of storage areas at airports was challenging. Desperation for food and water was a challenge. Order was re-established after 2 weeks. Coordination was the problem because so many NGOs were involved all pursuing their own agenda. Pre earthquake clearance of violent gangs prevented the outbreak of mass disorder. Telecommunications and IT were more resilient because the cell-phone was the preferred means of communication.

Deconfliction of nations involved was essential. Slow sequencing of source and deployment happened because the terms were not what they were used to. They experienced lack of air support, intelligence, and were not used to working with NGOs. Disaster response is divided from recovery. The military are involved with response. Analysis needs the political will to succeed through response into recovery.

IN THE ROUND

George Rose approved of the presence of the young and grey but was disappointed by the numbers attending. There also seemed to be a tendency to expand the presentations with many slides so reducing the time for discussion. Cornwallis remains relevant as the UK retrenches. Compiling the written and virtual records of papers on metrics over 17 years would offer a valuable overarching essay.

Accepting that US participants are stuck for travel, perhaps somewhere in the US or back to Canada would work for the next venue. The UK would not be a good future venue because of ISMOR. Selecting the right topic and people are the important aspects - Cornwallis just needs more people to flourish. Both British and Americans will be out of Afghanistan in a year's time so defence ministries will be focused on other things. To succeed Cornwallis needs to cover those, perhaps through a theme “The return to contingency”.

Dave Feveyear had been seeking applications to apply to his own domain area. Operations Other Than War formed the main interest. Techniques are not wholly new. Dave Davies' organisation saved the event by changing the venue and bringing in the students. Dave Feveyear would have liked more diversity; other domains and quantitative and qualitative techniques. As a future theme, “analysis to address the

seven Defence Lines of Development in a holistic approach to generate capability". For a venue, possibly Europe, Costa Rica would be nice but if cost is an issue perhaps Midway (or Ascension) would do.

Debbie Cheverton attended Cornwallis in Washington 3 years ago. As her first conference this coloured her view of other conferences. The hour is the key characteristic. The sessions with stop and start Question and Answer phases were the most engaging, with an adjust and discuss approach throughout. The size of the group allowed this semi-argumentative discussion to work well. Distribution of participants was awkward: it is difficult to justify Dstl people travelling to meet Dstl people in Fairfax. However the message to the Boss is that Cornwallis attendance should be enshrined in the capability development plan. It gives a chance to meet Greybeards and so to sit and listen to those who know more. United States is good as a location. Concentrate on the quality of the venue rather than location.

Neil Verrall saw Cornwallis as good: Meeting new people to learn about the diversity of their work. Subjects could be wider but he liked George's suggestion of Post Afghanistan what we will be doing eg Syria; contingency and OA; OR across government; New tools and techniques data. Venue could be Hawaii or wherever with great hospitality

Ian Mitchell enjoyed the social and technical aspects. Cornwallis reinforces the links with old faces as well as seeing new faces. There is more continuity than most government administrations. The venue was very nice. Cyber links were the best yet seen, eg being able to send a diagram at will from one machine to another for immediate projection in session. Evaluation is a spot on theme. Golf was great. An excellent social program included the Red Hot and Blue, the innovation of the second dinner, and the trip to the Army and Navy Country Club courtesy of Dan Maxwell.

The not so good aspects were the costs. The work environment precluded financial support for travel and accommodation regardless of technical merit so this was a private venture. Numbers suffered from the disruption of coming and going. This year seemed to be between the shellbursts of 5pm at National Defense University in 2010 and the lock in of the original Cornwallis Park where once participants had got to the venue, they stayed there.

Message for the boss is that similar problems exist with doing evaluation everywhere, but the main problem is not strictly technical. Continuity is the key for good evaluation, as well as investment and sustained effort. In the UK the Laidlaw and Macpherson reports on the West coast mainline appraisal problems suggest the benefits of well-founded analysis with a receptive sponsor.

Future subjects; in the current and near future – prioritisation will be a part of the theme. Sustaining analysis as a general concern- Feedback from what happens on the Ground - Practice will feature in July 2013 at the joint EURO/INFORMS conference EURO XXVI where there is quite a turnout hoped for in Rome. The National Audit Office and Alec Morton are looking at practical examples to complement the academic presence.

Factors for a future venue; the cyber- links worked really well in the Mason Inn, especially Lynne's presentation. Cyber-presence is not yet a complete substitute to meeting in person but does offer options to complement a gathering. In the real world somewhere different with favourable currency exchange rates, nice venue and historical interest would be good. One possibility was the Hotel Meridien 10 miles north west of Vilnius, Lithuania.

Gene Visco suggested that as the traditional Cornwallis timing had been to allow expanded periods of time for presentations, so this year we could have been even more flexible by exploiting the less dense program, where a 1 hour paper generating productive discussion might get 1 hour and 15 minutes. Good networking occurred with the young(er) participants. The hotel was great with service, staff, room and snacks.

Not good was the small size of the group because there were fewer papers. There is a planning group but Dave Davis has actually done the work. The load should be shared more evenly with more responsibilities for more people. Virtual part of the conferencing would allow those who would like to present to participate in part even if costs or other factors get in the way.

Cornwallis XIX plans should focus on a couple of factors. Availability of virtual facility and Travel costs. These vary so we should seek to hold Cornwallis at a low price point in the travel year. The move from Easter week has been traumatic but now we could find a new cheaper niche. Subjects could be the futures of military organisation; who would we go to war with in the next 10 to 20 years, who is the peer competitor of the future? We tend to forget, say never again and then we find ourselves building nations again. Physically the Mason Inn is super so a return would be fine as would Costa Rica, Hawaii or Vietnam.

Stan Coombes found Cornwallis useful as a place to take time to think about the subject, rather than being busy all the time. The venue was good. It was disappointing that people came and went. Presenting a paper and leaving limits discussion. A session at the end of each group of papers would bring out the lessons indicated and would form a capping paper of lessons noted overall. Dstl was very supportive. Cornwallis has helped shape the approaches so it is clearly relevant to work. Future themes should not be too narrow, so perhaps analysis of the return to conflict prevention, and or analysis of the concept of defence over the next decade.

Arjun Madahar had found Cornwallis to be a great experience. Giving a presentation of their ideas gives the presenters insights as much as listening to others, for example Dan's paper from the 1990s will help current work. Cornwallis generates random conversations and insights. Dstl only in the bar situations were not good in themselves although it was good to have the conversations. Message for the Boss will be "Can I come next year please?" Subject whatever. It has been brilliant to hear about the stuff beyond quantitative analysis.

Dan Maxwell said Thanks and looked forward to the next one

Tony Hopkin noted that what was good was very good. The distinguishing characteristic of Cornwallis is the mix of Greybeards with young analysts. Possible venues could include the failing states. Europe is cheaper; for example Cyprus and Greece are venues with good weather. 80% of US seem to have connections, real or otherwise, with Ireland or Cardiff so these may be viable. Europe and America are the main homes of participants.

What was good was the experience shared by the Greybeards. Dstl's Chief Scientist said in an address that the analyst must understand the problem, how wars are fought. Huge amounts were communicated in half an hour at Cornwallis, such as Gene Visco on the friction of war that would have taken hours of book reading to pick up, without understanding what they really meant.

George Rose remarked that analysts in the field often have the experience to say "if I do not know the answer I do know someone who does". Stability of people who are friends opens doors across organisations. One degree of freedom of introductions gives a broad circle of acquaintances. Personal contacts complement those made via Linked In.

Time available for discussion was 5pm to 1am in the morning; A lot of hours exist so make use of them. Inclusion of students both here and at West Point was excellent.

Message for Boss: Cornwallis gives access. Access to RAND documents via a point of contact made at Cornwallis is immediate and valuable. Build the network through exploitation of the tangibles. Push the stuff seen to other parts of laboratory. One person may sit 20 yards from another but it took Cornwallis XVIII for the two to discuss MARVEL.

On venues, teleconferencing technology makes cyber events feel like one big meeting and are cheaper. In 2011 Chris Holshek spoke live from Liberia: whilst the imagery was limited in places the approach worked. The technology for the presentation by Lynne Gennik in 2013 has evolved noticeably. Renting this equipment is expensive, but virtual meetings are becoming more feasible and affordable.

Dave Davies, Senior Founder noted that there is a new Program Chair in the form of Tony. Dave will assist as the US member with the Bank at George Mason for however much future we have. Costs of these meetings include the cost to have a venue, run the group, and virtual access. Cost has to be matched by income for the group to continue.

Some ongoing truths were the not enough time - too much time debate oscillates repeatedly. Dstl are always in the bar. The best Cornwallis events are secluded and residential. To be in or near a Capital city generates a greater degree of come and go. This is unavoidable.

The original subject was "Analytic approaches to the study of future conflict". Refocus of the military suggests it is time to look ahead. Maybe a cycle exists.

Evaluation of a programme in Ireland may be worthwhile. The numbers have to work.

Hotels tend to charge for whatever they provide so virtual presence may offer smaller savings than hoped for. NATO organisations have suitable locations such as the NATO School at Oberammergau. The Group would lose some control over the meeting if it used these. It has been a hell of an 18 year run. All the luck in the world wished to the successor. One year of help then you are on your own.

George Rose noted no Syndicates were run in 2013, akin to the debates between “Mathsmoles” and “ologists”. Sometimes syndicates work. It has been harder to get good mixes of papers. The mix offered is as random as the award of the golf trophy. Cornwallis XVIII has been good, especially given the constraints of 2013.

CLOSING LINES

The original meeting at Cornwallis was “Analytic approaches to the study of future conflict”. Both British and Americans will be out of Afghanistan so in a year’s time defence ministries will be focused on other things. To succeed Cornwallis needs to cover those: perhaps Syria, contingencies and analysis across government with new tools and techniques and data.

The Cornwallis Group recorded a vote of thanks to **Professor Dave Davis**, Program Chair as he handed over to **Tony Hopkin** to close the 18th meeting of the Cornwallis Group at 1201 on 18 April 2013.

EXEUNT OMNES