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Much ADO About Everything – Adaptive Dispersed Operations

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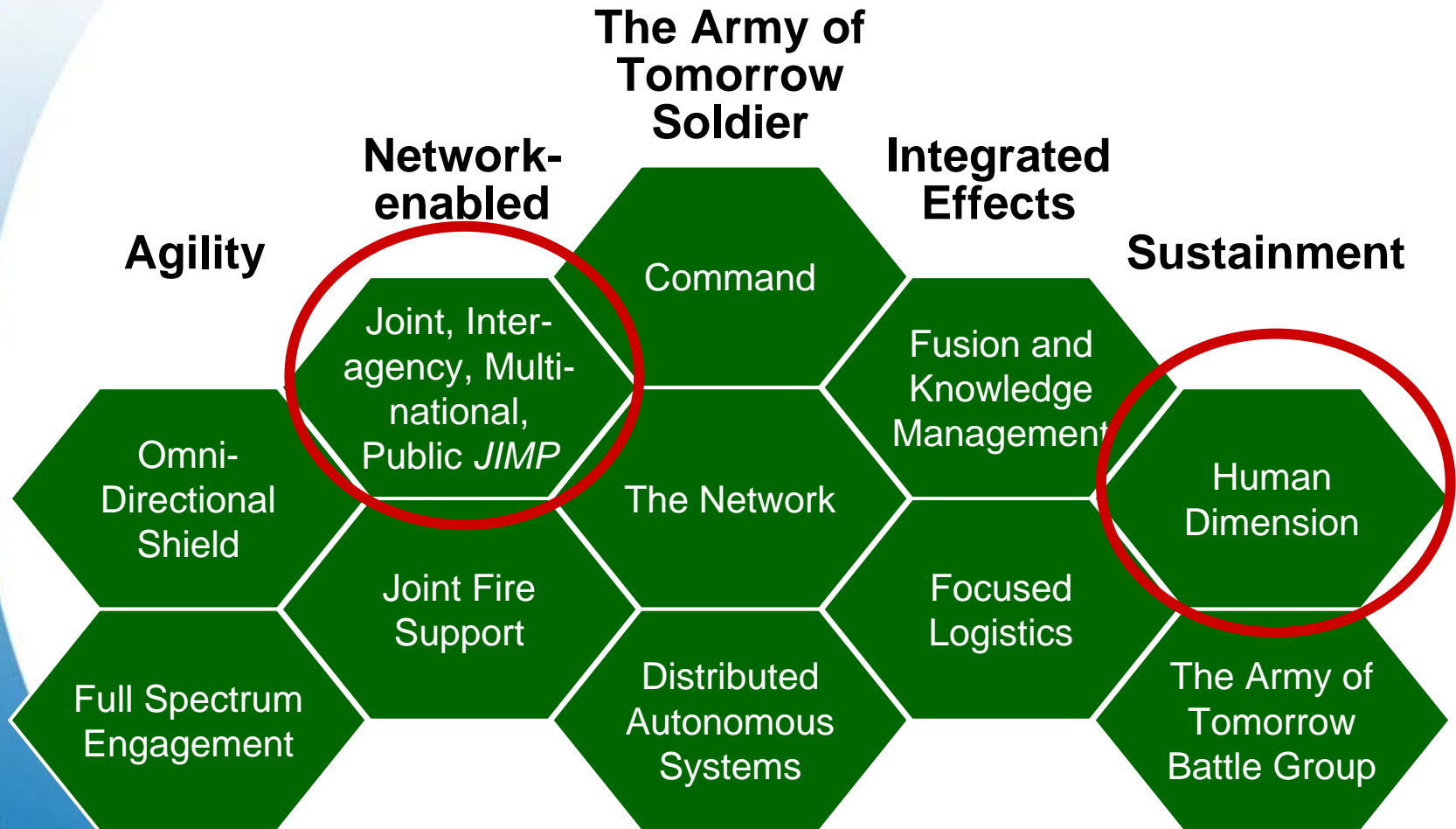
Outline



- Adaptive Dispersed Operations
 - “Joint, Interagency, Multinational, Public” Issues
 - The Human Dimension and the Soldier
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- Collaborative Planning and Decision Making
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Adaptive Dispersed Operations



Source: CLS, *Land Operations 2021: Adaptive Dispersed Operations*, 2007



“Joint, Interagency, Multinational, Public” (JIMP) Issues

- Operations in a world of ethnic, religious, ideological and material drivers – the **Human Dimension** of the environment
- JIMP brings to bear all instruments of national and coalition power and influence: diplomatic, economic, military, informational
- Operations today and in the future will resemble the ‘Three Block War’ construct
- **But** potential JIMP partners will not always share identically the goals of the Canadian Army

See [CLS 2007], [Gizewski 2007], and [Krulak 1999]



Canadian International Development Agency (CIDA)

MSF assess heavily hit areas after Peru earthquake



ICRC



Oxfam Canada





The Human Dimension and the Soldier



- “The soldier shares Canadian values, expectations and beliefs which include upholding democratic principles, maintaining the peace, ensuring order and good government, protecting people’s rights and freedoms, respecting the dignity of all persons and obeying and supporting lawful authority. These expectations and beliefs, combined with the soldier’s military values of duty, loyalty, integrity and courage, form the Canadian soldier’s military ethos that shapes the professionalism that governs ethical conduct to perform duty with honour.” *[CLS 2007]*
- Cold-War acknowledgment of “Human Dimension”: In models and simulations, degrade entities effectiveness in fire and movement based on morale factors



Army Experimentation



- Army Experiment 9A, Nov-Dec 2006
- Focus on development of ADO concepts
- Resembled “Command Post Exercise” at Battlegroup level and below, supported by computer-based combat simulation (Joint Combat and Tactics System – JCATS)
- Participants were provided with surrogate digital command and control systems, situational awareness tools, and some Internet collaborative tools
- Expanded on earlier experiments on collaborative planning, decision making, and command and control:
 - Army Experiment 3 (1999), Army Experiment 6A (2001), Army Experiment 6B (2002)



Collaborative Planning and Decision Making



- Command-centric approach and mission command
- Can incorporate:
 - Modifications to the operational planning process ... to integrate the results of individual command and staff estimates
 - Advances in technology and capacities of planning staffs that will allow devolution of planning and decision making to lower levels
- Changes can include:
 - Greater capacity in communications (personnel and infrastructure)
 - More collaborative planning with JIMP partners
 - Capacity to take a lead role in coalition operations



Tools of the Internet Age



- Email, and Attachments
- Chat Rooms
- Voice over Internet Protocol
- Instant Messaging
- Web Sites – http, html, css, asp, xml, AJAX
- Wikis

- Mobile Phone, and Texting
- Virtual Private Networks (VPN)



A Sample of Findings



- Ease of Use
 - Largely intuitive behaviour
 - Some users are familiar from home use
- Doctrine and Tactics, Techniques, and Procedures
 - Procedures
 - Products
- Training
 - “Buttonology” – “Press this button to initiate that function”
 - More Critical is Adapting to Command-Post Tasks
- “Knowledge Management” Channel
 - Equivalent to the “Command Net” in Radio
- Sharing with Other JIMP Partners
 - Who is trusted with what?



Coalition Military Operations



- ABCA Armies' Program (Armies of America, Britain, Canada, Australia, and New Zealand, and US Marine Corps)
 - Several relevant coalition interoperability objectives:
 - Joint-Interagency-Intergovernmental-Multinational and Non-Governmental Organizations
 - Intelligence Structures
 - Cultural Awareness/Intelligence
- SIPRNet for the US Armed Forces – Secret (formerly Secure) Internet Protocol Router Network
- CENTRIXS for Various Coalitions – Combined Enterprise Regional Information Exchange System
- CRONOS – Crisis Response Operations in NATO Operating Systems
- “To date, no security technology solution has been certified and accredited ... to allow confidential, multi-level information sharing over a single network... Each network is built to the same enterprise standard, but cannot be interconnected.” [Boardman 2004, p 3]



Opinion Surveys and Polls



- Many impediments, BUT
- Skills are available in the private sector
- Contractors for surveys and polls:
 - ACSOR www.acsor-surveys.com
 - Subsidiary of D3 Systems www.d3systems.com
 - Altai Consulting www.altaiconsulting.com
 - Sayara Media and Communication www.sayara-media.com
 - SENLIS www.senliscouncil.net
- Recent publications of survey results:
 - The Asia Foundation www.asiafoundation.org
 - Center for Strategic and International Studies www.csis.org
 - SENLIS Council www.senliscouncil.net

How would you rate the security situation in your area: excellent, good, fair, or poor? (Q-16, Base 6226)

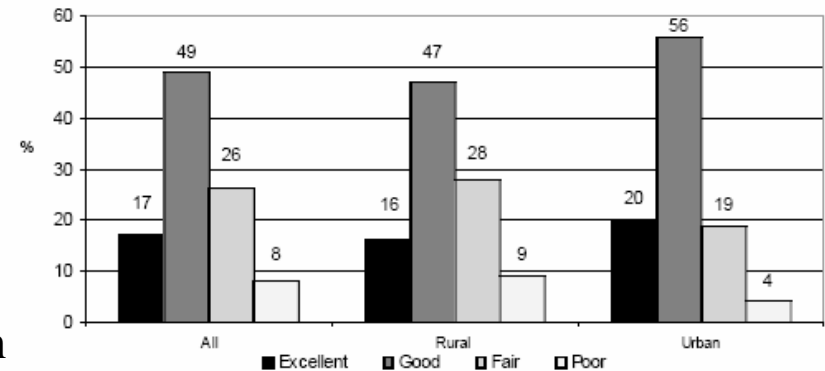


Fig 3.1

Table 3.2 Awareness of sectoral investment projects

	Eastern (%)	South Central (%)	Western (%)	Central Kabul (%)	South Western (%)	Northern (%)	Central Hazarajat (%)
Reconstruction of Roads and Bridges	80	56.7	75	49	56	52	19
Education	69	70	50	62	51	59	37
Health care	53	59	39.3	40.6	40	41	30
Water supply	39	53	49	32	55	32.2	14.8
Electricity	22.6	28.6	39.1	32	27.8	16.9	27.8
Demilitarization	64.3	51.1	42.3	46.7	40	67	18.3
De-mining	56.4	46.8	38	38.3	47	59	3.2

Source: Asia Foundation 2006



Practical Issues from Afghanistan



- Challenges:
 - Violence and Security
 - Long Distances and Lack of Infrastructure
 - Illiteracy and Other Educational Aspects
 - Unfamiliarity with Survey Research
 - Cultural Restrictions on Access to Women
 - Ethno-linguistic Fragmentation
 - Outdated and Inconsistent Population Data
- Field Team Selection, Training, and Quality Control
- Tests for Validity:
 - Patterns of consistent responses across questions by a respondent.
 - Patterns of consistent responses within an interviewer's pool of respondents
 - Patterns of non-response, e.g., interviewers with substantially higher average rates
 - Interviewer productivity (a test and a diagnostic)

Source: [Warshaw 2006]



Measures of Effects (MOE)



- Mission-related. MOE must “relate to the strategic objectives for the mission”.
- Comprehensive. MOE should “cover all tasks in support of the mission and should expand if the mission expands”.
- Meaningful. Two broad levels of MOE: “Mission-level MOE should focus on the effectiveness of the mission, [and] task-performance MOE should focus on the effectiveness of tasks”.
- Measurable. Data should be “collected and measured consistently over time and across areas”.
- Sensitive. They “should provide enough detail to ascertain whether the situation is changing”.
- Timely. They “should be responsive to the changes they are trying to measure”.
- Cost-effective. The process should “not to levy too high a burden on those tasked with the effort”.

[DND 1999]

Petraeus’ List

- Measurable
- Discrete
- Relevant
- Responsive

[US Army 2006]



Sample of Results

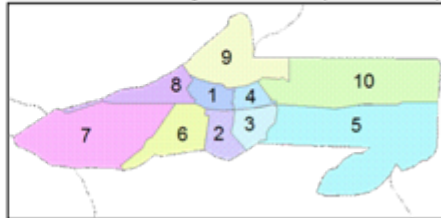


- First comprehensive poll of the Afghan population of Kandahar Province
- Conducted 14-28 March 2007 by 56 Afghan interviewers from ACSOR Surveys (Afghan-American joint venture)
- 1287 interviews across 18 Districts of Kandahar Province
- Most interviews conducted in Pashto (others in Dari)
- Women interviewed by female interviewers

Reference Map

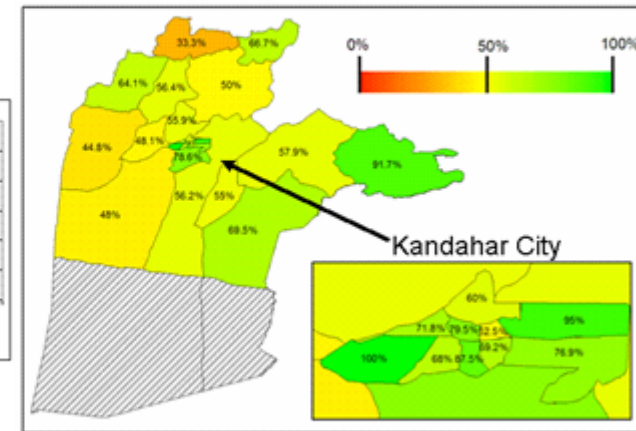
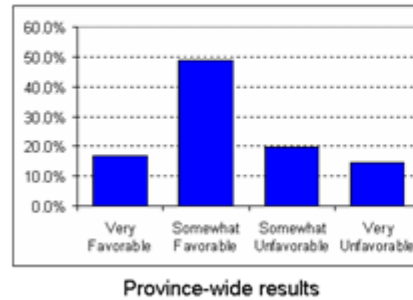


Kandahar City Nahias (Districts)



Perception of ISAF

Do you have a favourable or unfavourable opinion of ISAF / Foreign Troops?



Very/somewhat favourable: **65.6%**



Some of the Other Questions



- **Q-1.** How often do you listen to the radio?
- **Q-2.** Which radio stations do you listen to most often? Any other stations? Any more? (*Open-Ended with Pre-codes. Record up to three responses in order of mentions.*)
- **Q-5.** What is your main source of information about what is happening in Afghanistan? What is your second most important source of information? (*Open-Ended with Pre-Codes. Record up to two responses in order of mention.*)
- **Q-6.** How much trust do you have in the information coming from electronic media such as radio and TV?
- **Q-7a.** Turning to another subject, tell me, compared to 12 months ago, is your family now much more prosperous, more prosperous, the same, less prosperous or much less prosperous?
- **Q-7b.** And speaking of 12 months from now, do you think that your family will be much more prosperous, more prosperous, the same, less prosperous or much less prosperous?

See www.RANAFM.org, and listen in





Surveys and the Petraeus Criteria



- Measurable
 - Yes – but always have to reconsider what is being measured. Is it relevant?
- Discrete
 - Yes and no. Typically hard to discretize topics of social interest: unemployment and confidence in government, security and willingness to work, economy and optimism
- Relevant
 - Need to develop linkage between questions and potential initiatives
- Responsive
 - Depends on many factors
 - Latency to allow opinions to develop or information to circulate
 - Mechanics of data collection and analysis



Modelling and Simulation



- Cold-war era combat models
- MOEs were mission success, RED and BLUE casualties, loss-exchange ratios, FEBA movement
- Underlying algorithms were largely physics based:
 - Ballistics
 - Lethality
 - Mobility
 - Detection
- M&S must incorporate social issues, and the problems are getting *wicked*



Social Network Analysis



- Understanding of social links (see papers at 22 ISMOR – Hamil & Deckro, Williams)
- “Cultural Intelligence”
- Incorporated into US Army doctrine on Counterinsurgency Operations
- Related to intelligence analysis, see <http://www.i2.co.uk/Products/AnalystsWorkstation/default.asp>

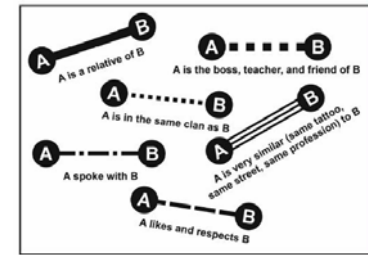


Figure B-5. Examples of dyads

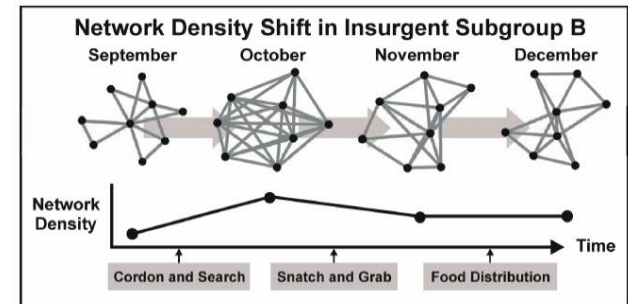


Figure B-7. Example of changes to tactics based on density shift

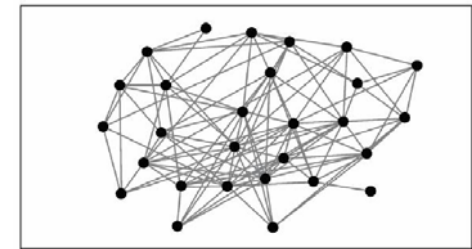
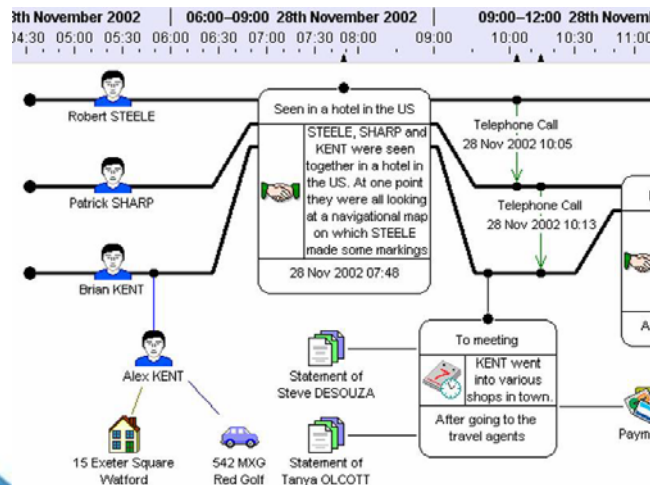


Figure B-8. Networked organization with high connections

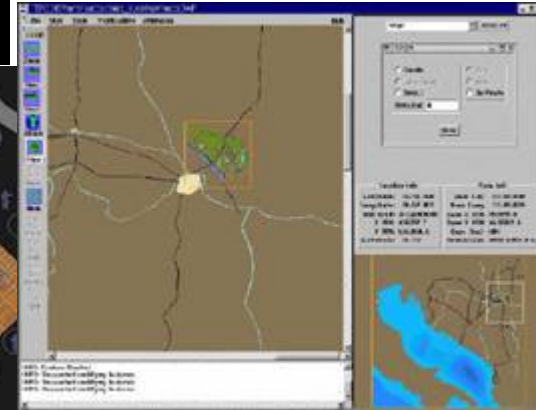
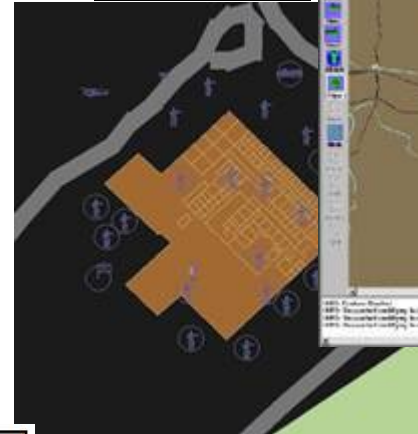
Source: *US Army COIN Manual, FM 3-24, Appendix B, Dec 2006*



Combat Simulations



- JCATS, OneSAF, VBS2, Others
- Serious Games
- Civilian Activity Modelling in Constructive Simulations (CAMiCS)
- AI.implant, and other potential solutions
- Crowd modelling – Peter Dobias and Annisa Frini





Conclusions



- *Adaptive Dispersed Operations (ADO)* provides strong endorsement to investigate diverse aspects of the *Human Dimension* – both as related to our own soldiers and also to JIMP partners
- Collaborative Planning and Decision-making
 - Technology, but also the *Human Dimension*
 - The military domain, but also JIMP partners
- Opinion surveys and polls... and much, much more
 - Measures of Effectiveness and the local population
- Modelling and Simulation
 - Civilian Activity Modelling in Constructive Simulations (CAMiCS)



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See ISMOR web site for the full paper and more references.

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