



FORSVARSAKADEMIET

RESEARCH PAPER
PROJECT KITAE PART II

**BATTLESPACE INTELLIGENCE:
SOCIAL NETWORK VS. TRADITIONAL TIME
AND SPACE ANALYSIS IN HELMAND**

By Dr. William Mitchell, Dept. of Joint Operations,
C2 & Intelligence, Royal Danish Defence College



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Royal Danish Defence College

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Abstract

This research brief focuses specifically on the preliminary findings from project Kitae Part II that dealt with intelligence analysis challenges deriving from a complex battlespace. The theoretical approach includes constructivist and material/efficiency approaches to understanding the challenges of the complex battlespace to military intelligence. These challenges to the traditional intelligence cycle are placed within a comparative framework of traditional time & space (TTS) approaches vs. a social network analysis approaches (SNA). A case study consists of participant observation data from a 6 month period in Upper Gereshk Valley (UGV), Helmand, Afghanistan. The objective was to identify the approaches that work best in a complex battlespace, where there are a plethora of actors and interests. The results clearly indicate that SNA is not only essential to understanding the counter insurgency (COIN) environment for effective warfighting, but just as important to understanding our own MI organization.

KITAE (Japanese) - Ancient Samurai Art of Forming the Edge of the Sword

This research paper is the second in a series developed as part of Project Kitae, a real-time participant observation project based on a 6 month tour as a Battle Group intelligence officer in Upper Gereshk Valley (UGV), Helmand, Afghanistan.

Kitae I identifies the key principles behind organizing the operational edge C2 for effect in a complex environment, specifically using a comparison of network versus hierarchal structures to help identify those principles.

Kitae II identifies the key principles of approaching the intelligence process for effective production of situational awareness in a complex battlespace, through a comparison of traditional time & space (TTS) approaches and Social Network Analysis (SNA).

Kitae III provides a case study on how you can formally engage the cognitive dimension of a battlespace through unit construction for effect.

Dedication

To those who died
Shaping the battlespace during the period referred to in this study.

Sapper Mark Antony Smith 26-07-2010
Lance Sergeant Dale Alanzo McCallum 01-08-2010
Marine Adam Brown 01-08-2010
Lance Corporal Erik Berre Rolandsen 07-08-2010
Corporal Jimmi Bøgebjerg Peteresen 07-08-2010
Lieutenant John Charles Sanderson 11-08-2010
Rifleman Remand Kulung 12-08-2010
Sapper Darren Foster 13-08-2010
Sapper Ishwor Gurung 13-08-2010
Lance Corporal Jordan Dean Bancroft 21-08-2010
Lance Corporal Joseph McFarlane Pool 05-09- 2010
Captain Andrew Griffiths 05-09-2010
Kingsman Darren Deady 10-09-2010
Trooper Andrew Martin Haworth 18-09-2010
Sergeant Andrew James Jones 18-09-2010
Private Simon Mundt Jørgensen 22-09-2010
Corporal Matthew Thomas 25-09-2010
Rifleman Suraj Gurung 02-10-2010
Sergeant Peter Anthony Rayner 08-10-2010
Corporal David Barnsdale 19-10-2010
Private Mikkel Jørgensen 23-10-2010
Sapper William Bernard Blanchard 30-10-2010
Senior Aircraftman Scott Hughes 07-11-2010
Ranger Aaron McCormick 14-11-2010
Lance Corporal Jørgen Randrup 14-11-2010
Guardsmen Christopher Davies 17-11-2010
Private John Howard 05-12-2010
Corporal Steven Thomas Dunn 21-12-2010
Warrant Officer Henry Wood 28-12-2010
Private Joseva Saqansgonedau Vatubua 01-01-2011
Private Samuel Enig 09-01-2011

...the more than 50 ANSF KIA

...the many CF/ANSF amputees

Foreword

When I first started this project to put theory to the test in a real battlespace I had no idea of the profound impact it would have on my views of modern warfare. It was a wake-up call as to how the world has changed socially since my first battlespace some 20 yrs ago –and how little the military has followed in terms of social organization. After returning home with some time for reflection, I can say with complete conviction that we are still in a transition period where the technological phase started in the early 90's will now be going over to an even more challenging social organization phase. Despite the reinvigoration of COIN thinking across western military sciences, there is still no military from any country in ISAF that could claim that they have the final answer. I would therefore like to express my sincere gratitude and greatest respect to my Danish, UK, and US colleagues who worked with CF NES N/16th Air Assault Brigade, for their brilliant efforts to deal with the most absurdly complex battlespace I have ever experienced. I would especially like to thank the Danish Battlegroup Commanders Col. Lennie Fredskov, Lt. Col. Thomas Funch Pedersen, Maj. Christian Bach Byrholdt (S3), and Capt. Thomas Larsen (S2). As the operational senior command element of the Danish Battle Group, they faced the tremendous challenges of having to field the rippling edge effects of a NATO in transition in terms of technology, doctrine, and organization. In the midst of a battle they had to deal with organizational changes, synchronize multi-national battle plans under constant pressure from a variety of actors, and implement both a developing Comprehensive Approach and a COIN doctrine. To add to this challenge they had to introduce Danish soldiers to 'partnering en masse' for the first time. This meant that daily warfighting routines had to make time for the introduction of new technologies, the merging of systems, and the testing of new organizational procedures throughout the 6 months. This included the implementation of human terrain mapping (HTM), biometrics, battlespace forensics, new ISTAR assets, legal procedures, COICs, new CI procedures, regional ISAF command restructuring, constant ANSF coordination meetings, and managing an extremely dynamic political situation and major vote in Helmand. If this was not enough, these changes in themselves compounded the challenge by producing uncertainty up and down a range of hierarchies not only in Theatre but also at home, resulting in over 200 VIP visits during the 6 months. All of which were dealt with very professionally by Team 10. These 'inside' challenges were played out against the kinetic backdrop 'outside of the wire' of trying to reverse the negative effects of a static battlespace and a deadly insurgent IED network that had emerged from it over the previous year. They had to re-establish the freedom of movement for their own forces amongst insurgent influenced tribal communities determined to protect some the highest yielding poppy hectares in the world with their established international criminal organizations that stretched from Gereshk to Los Angeles. I have no doubt that Team 10 has earned its place in history as participating in the epicenter of new age warfare complexities, where they engaged a battlespace driven to the extremes of complexity by forces within and without. I can therefore bare witness that the leadership, the staff, and the professional soldiers of the DABG made a superhuman attempt to get it all right. It has been an honor to serve with the Danes of ISAF 10. My deepest respect and great admiration should also be noted for members of the ANSF units such as the ATF - with whom I would go anywhere, and the 4th and 7th Commandos. Their courage, professionalism, and determination to fight for their own future create hope amongst the population, and for them, there is no respite after 6 months. I would also like to acknowledge the other NATO and US SF communities operating in Helmand, and for partnerships that provided the insight for many of the principles identified in this paper. In Denmark I would like to thank my colleagues at the Royal Danish Defence College for sup-

porting all initiatives in regard to the Kitae study, and 'covering my back' whilst away in Theatre. I would furthermore like to acknowledge the Danish Army Operational Command for their critical support in the preparation phase; the Danish Defence Command with their support and input in the preparation phase; and various members of the Danish Defence Intelligence community for extremely useful discussions and input before, during, and after the field study. On the academic side I would like to acknowledge the inputs from various international venues and arenas, particularly guidance and feedback from the Pentagons' Command & Control Research Program under Dr. Alberts; Defence Research and Development Canada and Keith Stewart; Maj. Pedro Fernandez at NATO School Oberammergau; the three time AFG vet Lt. Col Andrew Mackenzie of the NZ Defence; and finally Dr. David Phillips of the Tribal Analysis Centre, Washington D.C. for guidance and support in regards to tribal issues.

I have no words to adequately describe my appreciation and admiration for my wife and in-laws who together successfully ran the show on the home front for the second time in 3 years. Nor for daughters Ellen and Anna, who courageously watched their Dad fly off to his 9th battlespace for a half-year, yet with the first time understanding that not all who go to such places come home again.

A handwritten signature in black ink, appearing to read "William J. Schell". The signature is written in a cursive style with a prominent flourish at the end.

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Table of Acronyms

AFG	Afghanistan
ANSF	Afghan National Security Forces
AO	Area of Operations
BG	Battle Group
CIED	Counter Improvised Explosive Device
COIN	Counter Insurgency
CF	Coalition Forces
COI	Compound of Interest
C2	Command & Control
DABG	Danish Battle Group
EBT	Effects Based Approach to Operations
EBO	Effects Based Operations
FoM	Freedom of Movement
GIRoA	Government of the Islamic Republic of Afghanistan
GSM	Global System for Mobile Communication
HTM	Human Terrain Mapping
IED	Improvised explosive Device
INS	Insurgents
ISTAR	Intelligence, Surveillance, Target Acquisition, Reconnaissance
LN	Local Nationals
MoE	Measurements of Effectiveness
POI	Person of Interest
QEQ	Quantity Effects Quotient
RCT	Rational Choice Theory
SAQ	Structural Agility Quotient
SF	Special Forces
SME	Subject Matter Expert
SOF	Special Operations Forces
TiGR	Tactical Ground Reporting Tool
TFH	Task Force Helmand
UGV	Upper Gereshk Valley

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*Expanding time and space into a broader discourse,
deepens understanding and is a better basis for action.¹*

Introduction

This brief examines presents the preliminary findings on a comparative analytical field study concerning the role of military intelligence (MI) managing complexity in Helmand. It does so by examining the different stages of the MI cycle within a comparative analysis framework built –up around the juxtaposition of traditional time & space (TTS) approaches vs. social network analysis (SNA) approaches to understanding the battlespace.

The methodological context of the military’s approach to planning in Upper Gereshk Valley (UGV), takes place within an Effects Based Thinking (EBT) ² planning environment where knowledge is developed to generate desired effects and the appropriate actions to achieve them. As EBT has become the central guiding philosophy for military planning in a battlespace, the most important aspect for the application of knowledge in relation to the implementation of EBT is to ensure a “logical” relationship between end-state, objectives, effects, and actions.³No matter the level of formality surrounding the process, the MI cycle is the practical process of knowledge development within an EBT framework from which deliberate actions are developed and executed.

A complex battlespace is understood in this paper being asymmetric with both a cognitive and physical dimensions. It represented by the counter insurgency (COIN) environment consisting of the physical and human terrain referred to throughout the paper. In a COIN environment it is more important to control the people, rather than the terrain, as they are directly affect the freedom of movement (FoM) of both the insurgents and friendly forces. The observations for this study are taken from daily warfighting activities in one of the most violent areas of Afghanistan (AFG), the UGV in Helmand province within the area of responsibility belonging to TFH and the Danish Battle Group (DABG). The UGV is one of the most complex battlespaces⁴ in AFG due to the concentration of narcotics and the various competing forms of governance, known to TFH as the *official* (GIROA⁵), the *traditional* (tribal), the *shadow* (Quetta based Taliban insurgency), and the *dark* (narcotics cartels). So for studies of agility in complex battlespaces, it provides extreme conditions for testing our organizational C2 capacities in regards to their abilities to promote agility in a complex battlespace.

Agility

Agility as it is used here is intimately related to the effectiveness of the military organization

(1) Quote from Johan Galtung’s “The Arab World: A Discourse about Discourses” KIMPA VITA PRESS, Wednesday, April 27,2011

(2) EBT should not be confused with the independent US military Effects Based Operations (EBO) that is much more targeting driven. See Mattis (2008); For philosophical foundation see Smith (2005, 2006); Nicholson (2006);Mitchell (2004); and a doctrinal interpretation , see NATO (2007).

(3) Bi-Strategic Command Pre-Doctrinal Handbook (2007): 5-8 to 5-9; Smith (2006); Mitchell (2008)

(4) For methodological foundation see Johnson & Levis (1988, 1989); Alberts & Czerwinski (1997); S. Metz (2001) For battlespace definitions see Smith(2006); Mitchell (2008, 2009; 2010)

(5) Government of the Islamic Republic of Afghanistan

in converting knowledge to action for desired effects in the battlespace. As the MI cycle is the mechanism of knowledge development within the military organization, the analytical method is a key determinant of how the effective the knowledge-action-desired effect process actually is.

The New Kid on the Block

SNA is relatively new to battlespace intelligence and though it has the same ontological roots as TTS in terms of rationalism; it has a slightly broader methodological foundation rooted in various streams of constructivist theory. Based on a constructivist interpretation of the asymmetric battlespace, complexity in the battlespace is seen as a product of the constructivist dynamic known as intersubjectivity⁶ due to the constant interaction between the physical and cognitive domains. This foundation allows for the more practical application of core constructivist concepts such as norms and identity, one can define the competing interests in the battlespace with SNA approaches.

A major theme in conventional constructivism concerns the role of identities and interests. It is here that conventional constructivism has the most to offer in terms of multi-dimensional battlespace analysis. It does so by treating identities as mechanical parts of an actor's formulation of their own interests and preferences obviously affecting behaviors in the battlespace.⁷ Here the use of SNA for operational analysis within an EBT framework becomes rationalized, offering supplementary explanations to preference building among actors in a COIN environment.⁸ For example, understanding the when, why, and how an insurgent network behaves more like a narcotics cartel rather than an ideologically driven combatants.

The research paper is divided into 5 parts; the first explains the analytical framework, while the remaining sections carry the comparative analysis through the intelligence cycle. The conclusion offers a short summary of the major principles identified from the analysis.

Part I - The Analytical Framework

The traditional MI analysis cycle will be used as the controlling model for a comparative analysis of observations from the Helmand study period. Each stage of the process will be examined within the context of a comparison between TTS & SNA approaches.

Since the implementation of PMESII⁹ current MI organization has had to adjust to providing social intelligence to support the non-military dimensional analysis in the operational planning process (OPP). In order to do this, the focus has shifted to other than Order of Battle Reports¹⁰ (ORBATS). ORBATS are one of the traditional products of MI output in terms of basic intelligence – it constitutes the intelligence that is used for baseline referencing to support planning as well as grounds for initiating new taskings (*direction*). It traditionally tracks such aspects of the op-

(6) See Mitchell (2008;2010)

(7) See Ted Hopf (1998):174-175.

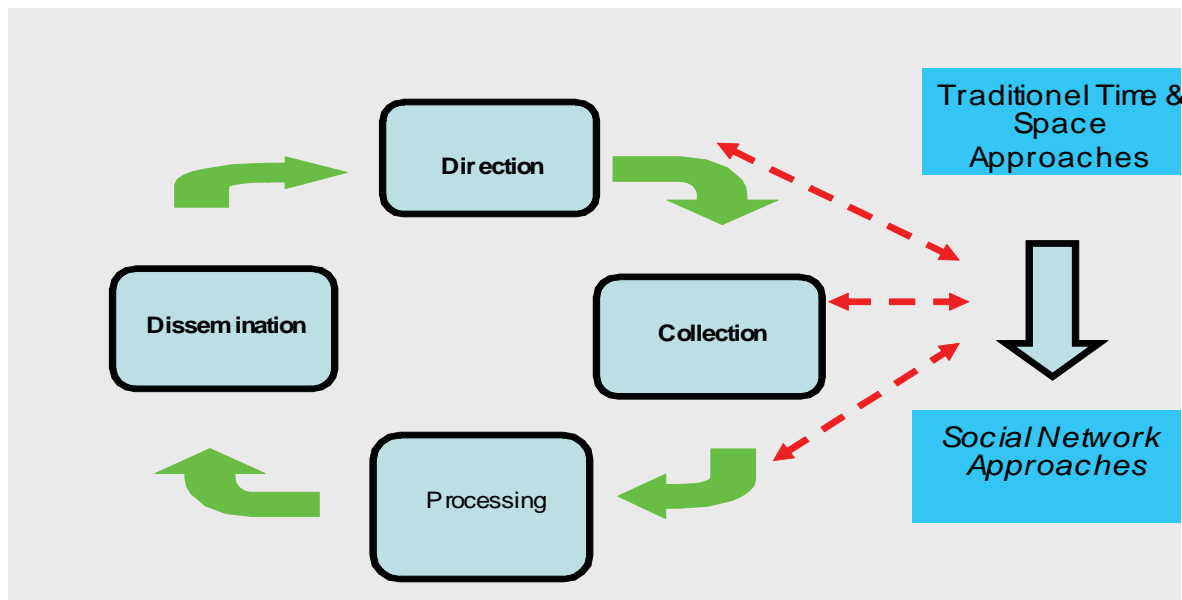
(8) Scholars having worked on this theme include almost every contributor to Katzenstein 1996, The Culture of National Security, Eyre & Suchman (73-113), Price & Tannenwald (114-152), Finnemore (153-185), Herman (271-316), and Berger (317-356.)

(9) Political, Military, Economic, Social, Infrastructure, Information

(10) UK MOD Doc (1999):1A-2.

ponent's equipment, capabilities, performance¹¹, as well as some relatively light socio-political matters relative to leadership or logistical support.¹² The EBT philosophy (not doctrine) must be supported by relevant intelligence *collection* and *processing* and is the driving force for an expansion to other than military dimensions. Human terrain mapping (HTM) is a good example. The *collection*, *processing*, and *dissemination* of non-MI dimensions is now playing a pivotal role in the development of the knowledge base necessary to ensure PMESII can be properly exploited in the OPP. The structured collection of this information is being implemented primarily in the form of HTM throughout "edge" units in a COIN environment; however the process is only now becoming widespread, and there are varying degrees of success where it concerns the management and integration of the new dimensions into planning. (See Fig. 1.0)

Fig. 1.0 Intelligence Cycle



The analytical framework is comparative analysis of two different methodologies for the generation of situational awareness and actionable intelligence. The TTS division of AOs has usually been determined by topography and a units' physical capacity to manage that area vis-à-vis the expected opposition. Consequently MI analysis has had a very strong tradition for focusing on TTS descriptions associated to an AO. The complete reliance on this approach is being put to the test, as PMESII requires both a physical and cognitive understanding of the battlespace. Development of SNA approaches to the processing of intelligence has been used in civilian intelligence for the better part of two decades, starting with the first adoption of link analysis, a form of iterative modeling. However the development of both internet and GSM technologies continues to improve the capability of information sharing, so that SNA approaches have become more useful to current military operations.

(11) Libicki & Johnson (1995): 48-49 (Good example of the comparative tech focus)

(12) Military intelligence output is divided generically into basic and current intelligence – current intelligence is situational and not referential in character.

From the period of August 2010 to January 2011 within the Task Force Helmand intelligence community both TTS and SNA approaches were used for managing fusion analysis. TTS divided the battlespace into geographical areas mainly based on convenient topographical landmarks such as a river or road. While SNA approaches were implemented for the first time, using their standing iterative models (link charts usually), and hypotheses generation that transcended the TTS topographical divisions of the main AO.

The objective of the comparative analysis is to highlight the advantages and disadvantages of using these different approaches in a COIN environment. A COIN environment is understood as having both a physical and cognitive domain, and one of the key differences between the two approaches is the point of departure for operational planning. SNA approaches typically start with identifying social systems within the environment and in the process attributing identities, interests, and functions to different social organizations. For example, the role of narcotics financier has social norms and interests attached to that identity. TTS approaches have a start point based on the physical domain, anchored in the appropriate topography of a given AO and opponent C2 structure.

Both approaches are subject to the EBT philosophy for planning actions within a battlespace. Both approaches are also suited to this philosophy from their respective start points, as long as one accepts that emphasis on the physical domain does not automatically refer to kinetic actions, nor more than emphasis on the cognitive domain does not exclusively refer to non-kinetic actions. For example an overwhelming show of kinetic 'muscle' might be deemed useful to convince local national undecided local nationals which side is strongest (cognitive effect.) Where they differ fundamentally is the nature of the products they produce, TTS approaches tend to be focused more on description than prediction, while SNA approaches tend to serve prediction better, due to a reliance on iterative models.

Part II - Analysis Direction

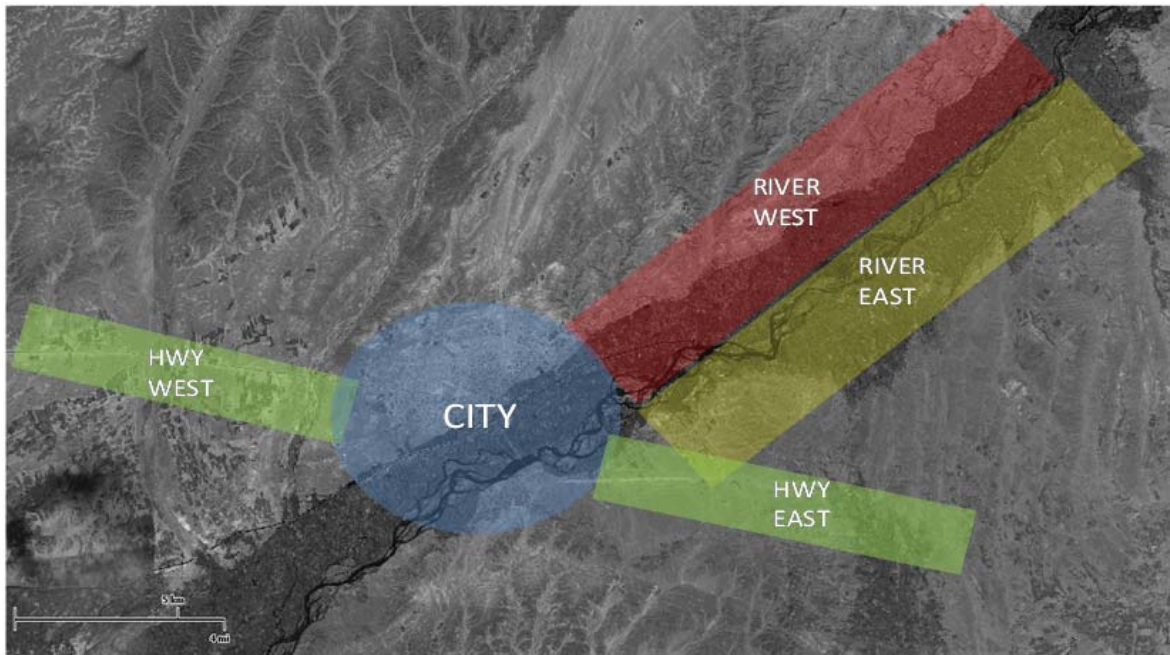
Defining the battlespace?

Direction is the most important phase of the MI cycle. It will determine where limited resources should focus in terms of supporting the collection plan for use with deliberate & framework operational planning, as well producing actionable offensive and defensive (*force protection*) intelligence. However all cycles must have a start point and when taking over a battlespace that usually begins with an Intelligence Preparation of the Battlespace (IPB), an overview of all that is believed to be important to situational awareness to provide a basis for the first planning process.

TTS - Direction

On arrival in July 2010, the first objective for direction was to assess the picture presented by previous teams that worked purely with TTS methods, small AOs were neatly divided and the majority of patrol bases (PBs) had established a 'troops in contact' (TIC) line at certain distances from the PBs. This simply means that according to the troops at the PBs, if you cross that line you will likely be attacked, or you would face a belt of IEDs too risky to go through. (See Map 1.0)

Map 1.0 Traditional AO Division



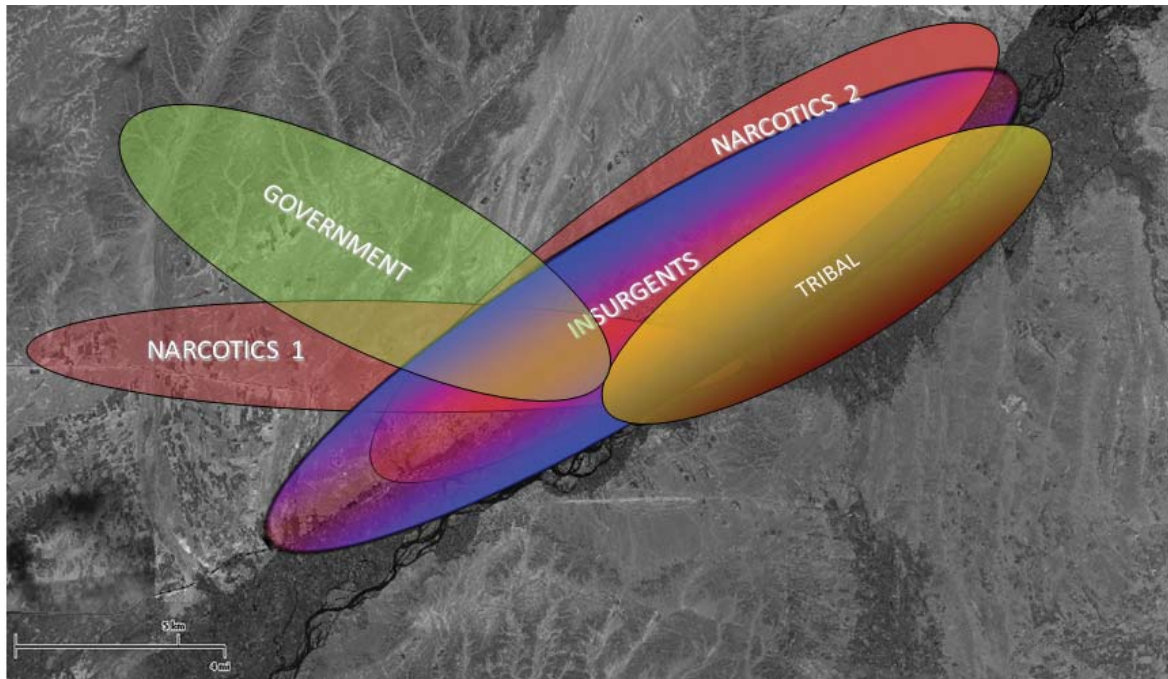
The picture of INS built by the linear TTS approach were that there were small INS cells fixed in AOs apparently matching our own (this was a very suspicious.) Each INS cell had attributed to it, its own hierarchal structure similar to military unit of the same size. Focus was clearly on force protection issues with regards to preventing IEDs being seeded on resupply routes to outposts, or giving warning of possible small arms fire attacks on PBs. This included a focus on identifying INS training, tactics, and procedures (TTPs) with focus on their available weapon systems in the AO.

SNA - Direction

Applying SNA to the existing picture quickly presented several key issues not raised by the situational awareness produced through the TTS approach. The first was that the INS IED production, distribution, and laying was systemic and organized in manner that transcended the boundaries of established coalition force (CF) AOs, and therefore required INS to move throughout the various AOs - and beyond. The second was that poppy fields and narcotics played a key role in determining the location of key INS C2 nodes, and what type of activities they would engage in, and when. Thirdly, that the traditional tribal system also had a role, either by its presence or its absence, among local national (LN) across the different AOs. Finally it was quickly determined that corruption within the official authorities would also affect our planning especially when the strategic goal is to promote the legitimacy of the official government among the LNs.

Working off of these standing models, the SNA approach seemed to fit existing fusion analysis from reach back capacities, and historical streams of covert intelligence. It indicated four existing types of governance that could form the basis for standing models, the *official governance* being the state; the *shadow governance* run by the INS with theological undertones and a competing judicial capacity; *dark governance* run by the narcotics cartels; and finally the *traditional governance* run by tribal elders. (See Map 2.0.)

Map 2.0 Network Approach



Assessment - Direction

In terms of providing situational awareness for direction, complete reliance on TTS had some serious deficiencies when taken in light of recognition for the overarching EBT framework. The greatest fault was the dominance of linear time and space divisions and focus on the military capabilities of the INS. It was apparent that the TTS approach had facilitated the development of a battlespace picture that mirrored doctrinal principles of conventional warfare, rather than then describe the COIN environment. Therefore the possibility of implementing SNA analysis to the existing battlespace picture that was built solely on TTS method - was also an opportunity to clearly identify the value-added of SNA approaches.

Summary - Direction

In terms of providing situational awareness for the commander to issue the initial direction, it was apparent that the TTS approach was unable to manage multi-dimensional analysis within the PMESII framework. All other dimensions within the PMESII framework were primarily used as a formulation of a general knowledge background picture for the military dimension; for the most part they were not linked to their impact on the military aspects of the insurgency. When SNA method was applied to the same reporting, it became very apparent that tribal affiliation and narcotics played a very important role in the insurgency.

Finally, and most surprisingly, the TTS approach had severely damaged the TFHs time and space understanding of the INS FoM. The TTS approach tended to force INS FoM to fit our individual unit's FoM limitations due to a linear doctrinal 'baggage.' One of the best examples was a PB 20km away from the main base took our resupply lines up to 4 hrs to reach because of the TTPs to be followed or counter the IED threat. In that time, wanted INS could easily make the Pakistan

border just over 2 hrs away. However, the tendency was to pack the FoM of the INS into the same time and space lines we drew on maps based on our own capacities and limitations. It corrupted the physical dimension while ignoring the cognitive dimension.

Part III - Analysis Collection

What do we collect to insure accurate situational awareness for action planning?

As direction drives collection, the initial assessment provided to the Commander in order to provide direction, will greatly influence the generation of the intelligence collection plan (ICP.) Which is essentially a breakdown of the fundamental questions the commander would like answered known as priority information requests (PIRs) into specific questions for our collection assets. As one would expect, the questions would differ as to which method was used to define the original battlespace. Once again the opportunity to see what the TTS method had done with the implementation of PMESII with regards to the ICP presented itself. And again, it was an opportunity to clearly see the value added by SNA approaches.

TTS - Collection

The TTS approach focused almost explicitly on the identification of insurgent persons and positions within the BG defined battlespaces. Even though there was some acknowledgement of the multi-dimensional battlespace and the PMESII framework, it could be best described as superficially represented in the collection focus. There was a strong tendency to ignore the implication of the totality of the COIN environment within sub-unit battlespaces. This had a direct effect on operations where the majority of patrols sent out had no intelligence objectives, but were simply classified as ground dominance patrols (GDPs.) This in turn also contributed to the distortion of INS FoM noted in the previous section. (See Table 1.0.)

Table 1.0 TTS Approach to ICP

What are the names of INS in the AO? What weapons do they carry?

What are the names of INS commanders in the AO?

Do local INS have family in the area?

What are the names of the INS patrol leaders?

How often does the INS patrol in the area?

Who is the mullah for the INS?

Where do the INS come from?

What type of vehicle do the INS drive?

Do any of the INS use a Motorola? Name?

Which INS does most of the talking at shuras?

What is the name of the INS judge for the AO?

What is the name of the INS who decides how much the LN will be taxed?

Who are the INS in the area? What are their functions?

Where do INS live/BDL in the area?

Where are there INS staging areas in the area?

Are there HME storage facilities or locations in the area?

What are the family names and tribal affiliations of the INS in the area?

Where are there arms caches in the area?

Which INS gives the orders to the other INS?

SNA - Collection

The implementation of a SNA approach immediately began to challenge a year old understanding of the battlespace that was packed into a conventional division of the AO. The first step was to engage PMESII as directly as possible into the ICP so the multi-dimensional aspects of the battlespace could be developed. The second challenge was to use this knowledge to expand our own understanding of the INS in order to better reflect *their* time and space issues, that would help us guide collection. This would turn out to be a challenge more dependent on our own organizational culture than the INS organization. Issues concerning the how force ratios were built continued to be a challenge throughout the period, estimated number of INS in AOs, were literally being forced into conventional understandings through power point presentations that did not reflect ground truth. (See Table 2.0.)

Table 2.0 SNA approach ICP Example

What are the names of major landowners (Khans), their tribal affiliation, their place of residence, contact info?

The names of elders, their tribal affiliation, their place of residence, contact info?

The names of mullahs, their tribal affiliation, their place of residence, contact info?

The names of doctors, their tribal affiliation, their place of residence, contact info?

The names of shop owners, their tribal affiliation, their place of residence, contact info?

The names of other major employers, their tribal affiliation, their place of residence?

The names of other Maliks, their tribal affiliation, their place of residence?

Who owns the compounds?

Who buys the produce (who do they sell to and where)?

What do they grow on their land?

How do they settle local disputes?

Do the INS provides shadow governance?

How much do INS tax LN?

How much do GIROA/ANP tax?

How do LN receive the local/regional/national news?

This distorted view of INS FoM distorted force ratios necessary for operations, it was a situation produced by the TTS approach, and it was an issue that took four months to sort out with operational planners.

Summary - Collection

Reflecting the perpetuating forces of the intelligence cycle, the consequences of the dominant TTS approach where it concerns direction could easily be identified in the approach to collection. The result was inaccurate situational awareness for operational planning, organizational insulation from reality, disjointed actions from effects, and a collection and planning process built on perpetuating inaccurate information. Furthermore, the absolute importance of integrating the operational planning with the collection was highlighted as 'the' issue most severely damaged by conventional thinking. The implementation of a SNA approach to collection also highlighted a very important organizational fact, that when operating in a COIN environment there was a powerful increase in intimacy required between collection and operations. The SNA approach to collection perpetuated intelligence led operations, the TTS approach did the opposite, promoting the building of plan after which descriptive intelligence would be added.

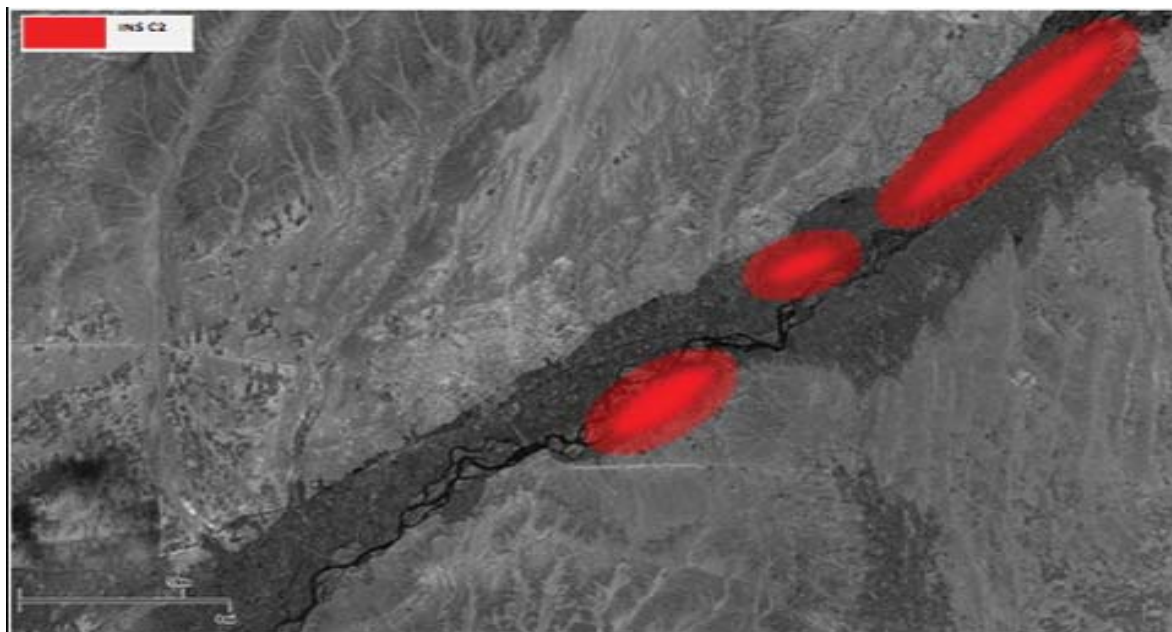
Part IV - Analysis Processing

How do we manage and exploit the information collected?

TTS - Processing

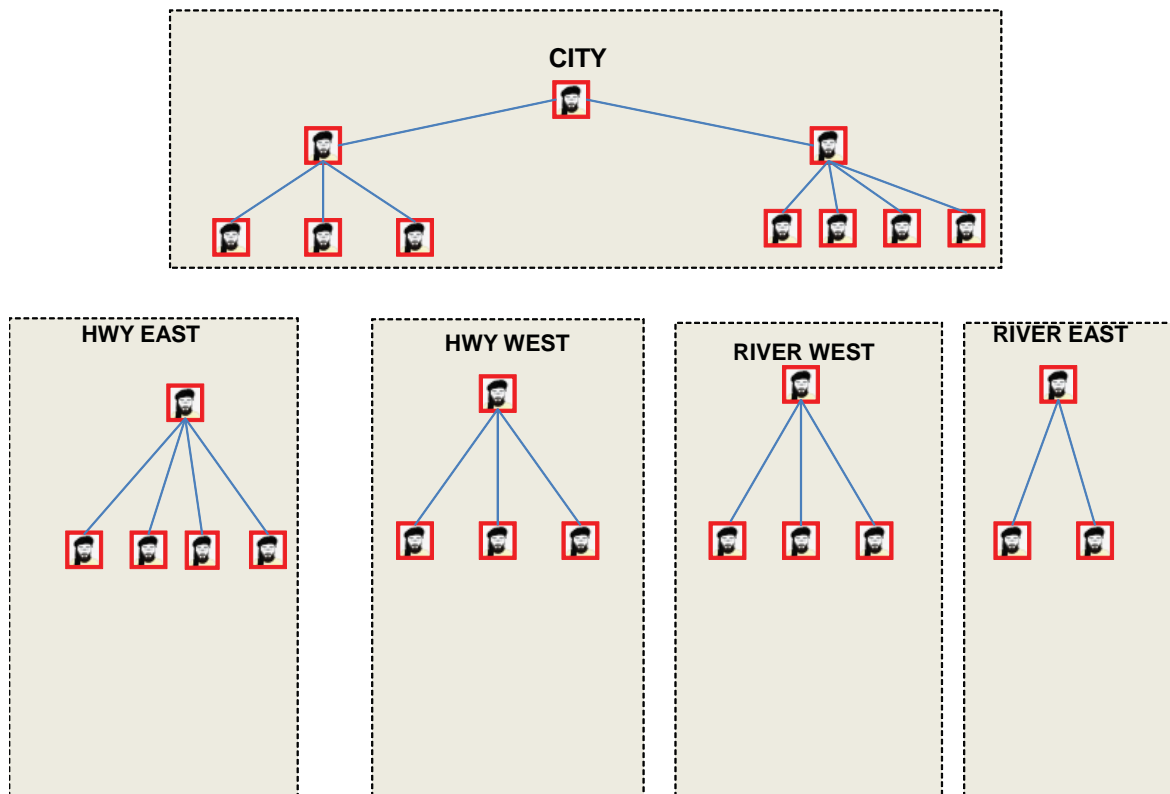
TTS approaches work primarily on establishing the ORBAT of their opponents. In doing so, they primarily focus on the physical characteristics of their opponents' strength, skill, and location. On arrival in theatre ORBATs were presented for the different units AOs, this would include a C2 structure as well as a capabilities assessment. Furthermore the focus was squarely on where and what type of IEDs were in the AO, and the counter-measures to employ to avoid those IEDs, including the establishment of TIC lines and no-go areas due to IED seeding or small arms fire (SAF.) (See Map 3.0.)

Map 3.0 INS C2 TTS Approach



INS C2 structures were described as local hierarchal cells that operated in very restricted geographical areas that, according to their own calculation, interestingly enough matched our own AOs. The focus was clearly on force protection – how to find the IEDs absolutely dominated the streams of information to be collated. When it came to the INS themselves, emphasis was on filling out and updating hierarchal cells with possible names of INS as well as their military command function. Intelligence collected was collated within this framework, and ended with presenting INS C2 structures that apparently had the same type of hierarchal formation as our conventional forces. (See Fig. 2.0)

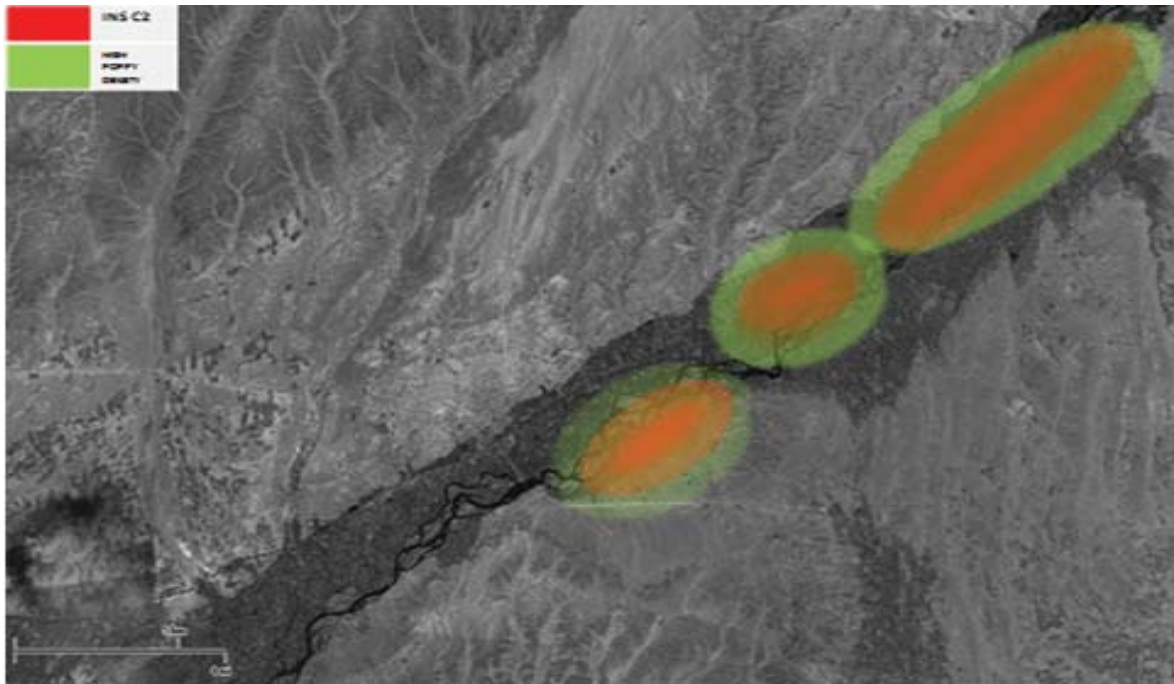
Fig. 2.0 TTS C2 Approach



SNA - Processing

The first real application of SNA analysis to manage a broader spectrum of battlespace domains was based several different streams of reliable information from the INS themselves. It was dominated by discussions of activities related to narcotics in our AO, and once the collection focus was broadened, it became apparent that narcotics reached into every dimension of PMESII. It was decided then to build and parallel track the narcotics networks alongside the INS networks to understand the nature of the INS- narcotics relationship. This resulted in a realization that in terms of time and space, the key INS C2 nodes were sitting on some of the highest poppy density areas in our AO. (See Map 4.0)

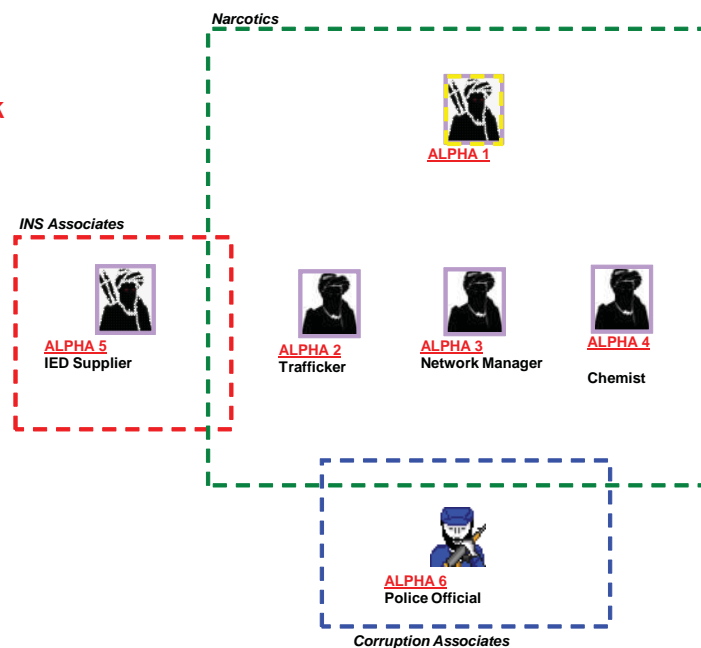
Map 4.0 INS C2 vs. Poppy Density



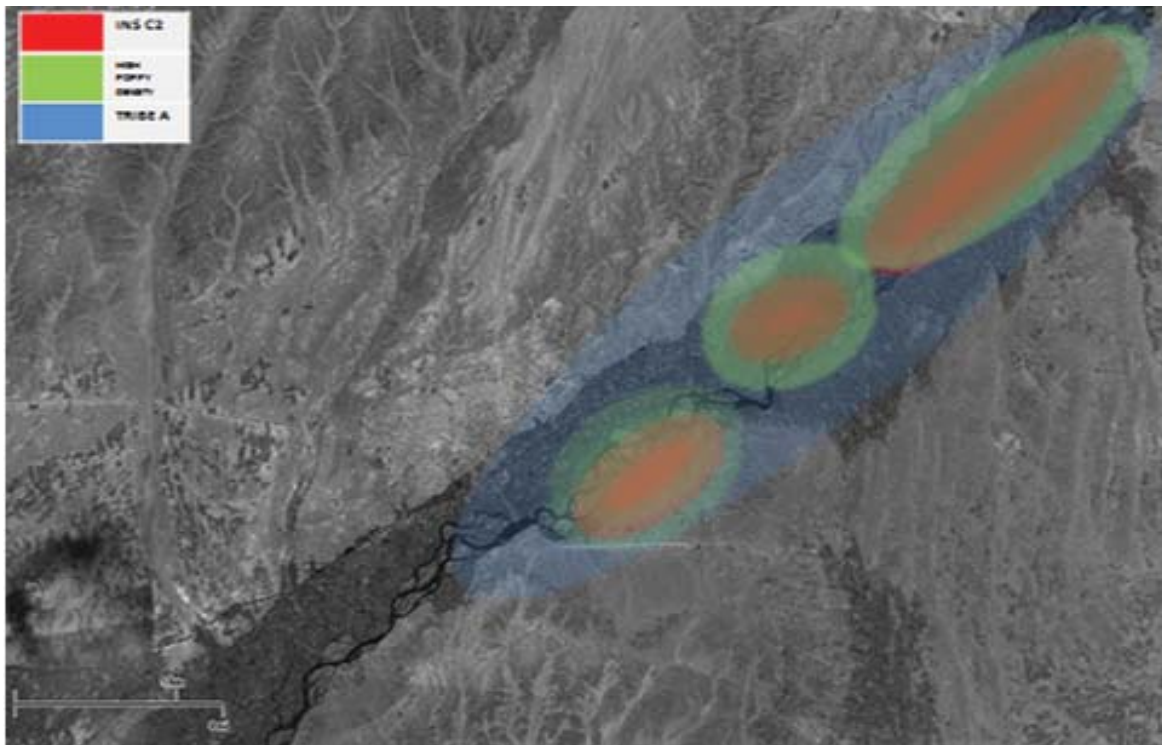
This led to focused collection effort to populated narcotics related models, including their C2 with respective functions in order to cross-reference, this will be examined shortly. However, the narcotics issues stretched over several PMESII dimensions, this included the political in terms of corruption, economic in terms of the local economy, the social in terms of violence, and even infrastructure dimension as labs used for producing morphine paste were also linked to IED and homemade explosive (HME) production in the poppy off-season. (See Fig. 3.0.)

Fig. 3.0 SNA Approach

Cartel: **ALPHA Network**



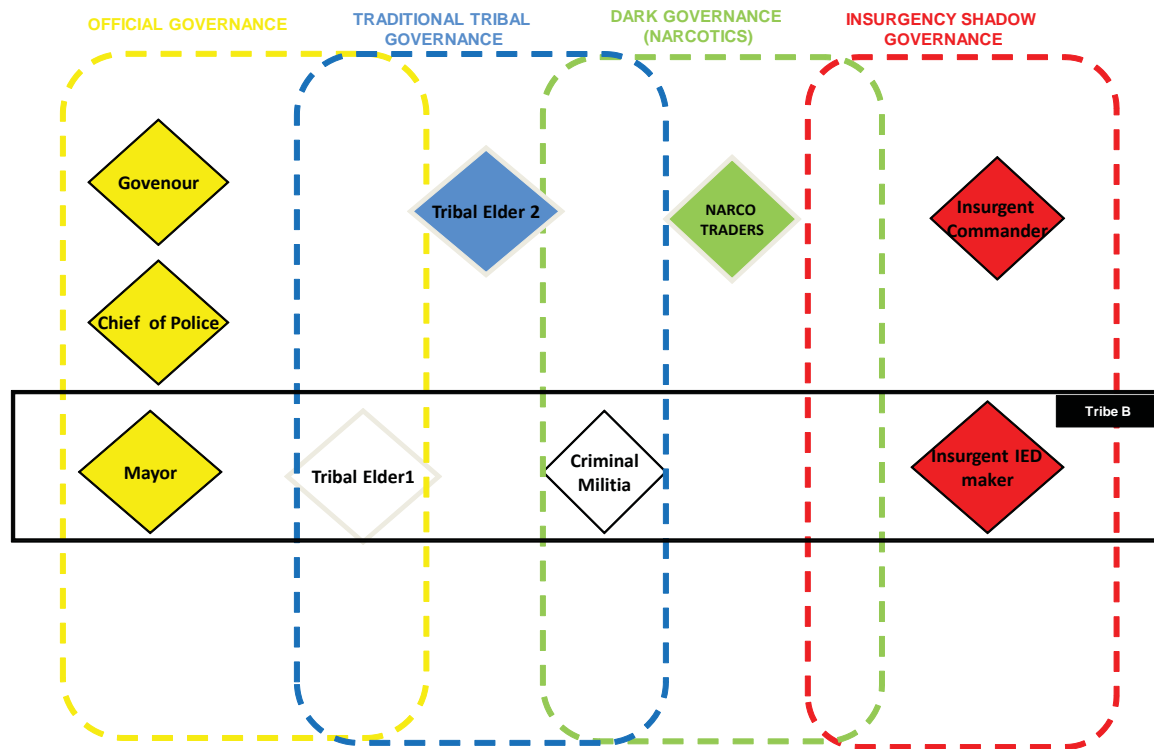
From a pure time & space perspective once we cross-referenced the narcotics and INS networks with known tribal territories, it once again provided enough explanation to positively identify two narcotics cartels as tribe “X” cartels, due to the fact that the INS C2 nodes and narcotics C2 had many from the same tribal affiliation. It is from this analysis that we were able to provide intelligence as to the areas likely to be the most resistant to GIRA influence, and the best targets for degrading the INS supporting infrastructure to create “white space” to promote the influence of the national government. (See Map 5.0.)



Map 5.0 INS C2 vs. Poppy Density vs. Tribal Territory

Using standing models for tracking allowed us to develop a situational awareness where it concerned the development of actions to produce desired effects, and the possible undesired effects to proposed actions. A good example was the case of whether or not to eradicate poppy in farmers’ fields because it was a main source of income for the INS. Though it would destroy income for INS with which they buy weapons and make IEDs, it would significantly damage the LN farmers’ economy and not serve the objective of creating “white space” for governance development. And as the profit margins per kg of poppy were the smallest for the farmers, it did not make much sense. Instead, it was decided that processing labs, owned and run by INS or senior cartel members, should be targeted, as the farmers had already been paid, and the profit margins for the narcotics-barons began to skyrocket with the selling of morphine paste. (See Fig. 4.0.)

Fig. 4.0 SNA Standing Models



Furthermore, we could establish a framework for assessing 'governance' that could be used for assessing different sub-unit AOs with respect to each other. This helped with planning, synchronization of actions, as well as resource delegation for the purposes of achieving the desired effect. In the Fig.4 example, 'Tribe B' was a major player with links across all governance dimensions and became the focus of kinetic and non-kinetic operations.

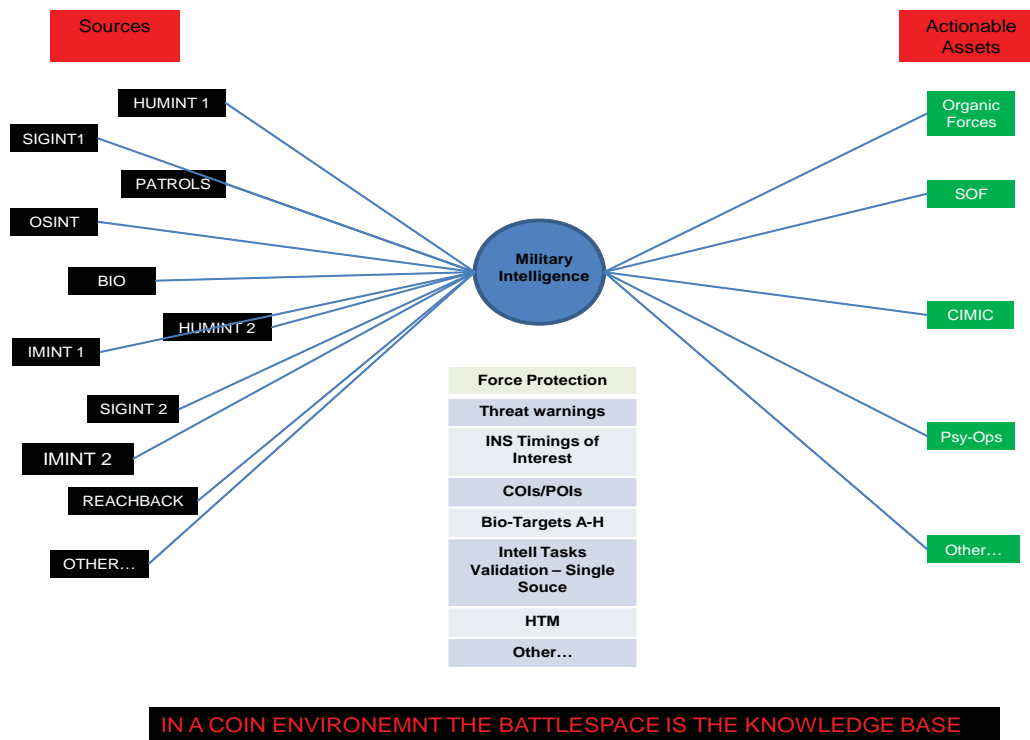
Summary - Processing

It was crystal clear that in order to ensure a better understanding of the action and effects needed for an AO, a more complex understanding of the battlespace would have to be generated than that produced by TTS approaches to processing. TTS approaches to modeling reflected a very static opponent who organized themselves in manner somewhat similar to the last few hundred years of western military organization. TTS approaches could not manage the multi-dimensional analysis needed for a COIN environment and EBT. The SNA approach, driven by relevant collection, divided itself as needed among relevant themes, dictated by the intelligence streams being collected. It provided the breadth and richness that better reflected the PMESII understanding of a COIN environment, as well as more accurately portrayed the ground situations for EBT. However, TTS understandings did have a key role to play in the cross-referencing of the different SNA models, and providing key links as to the role each different governance dimension played topographically. So it is worthy to re-iterate here, that TTS vs. SNA is not an exercise in zero-sum.

PART V – Analysis Dissemination

The most important issue relevant to the dissemination of knowledge in a complex battlespace is *timeliness*. In a COIN environment the intelligence deteriorates extremely quickly, in our AO, mobile phones were everywhere and provided a solid communications base for INS during the daytime hours. We had to compete not only in terms of FoM, where INS had a tremendous advantage amongst LN, but despite our technological superiority in general; their widespread use of the mobile phone with SMSs, gave them an advantage in terms of information management in the battlespace due to their natural tendency for loose networks. Essentially the objective of dissemination is to maximize battlespace agility. In this regard the speed at which knowledge is developed and delivered to the capacity with authority take action is the key. (See Fig. 5.0.)

Fig. 5.0 Battlespace Agility at the Edge

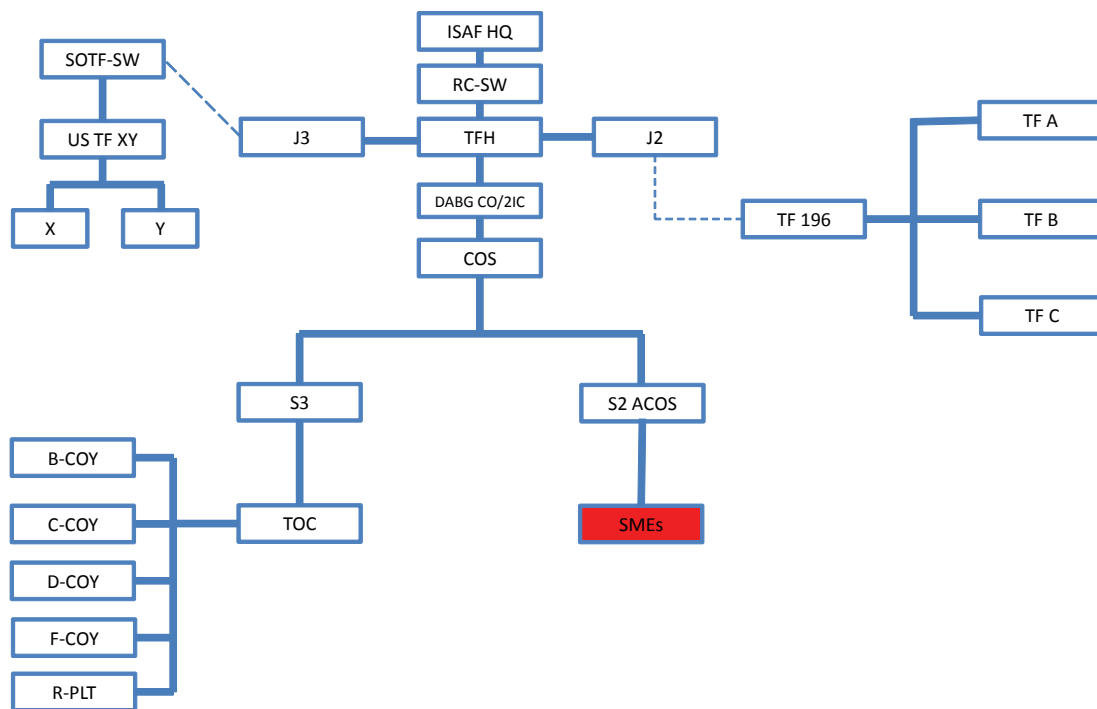


It is very important to note that where it concerns dissemination technological capacities for information management are fundamental to insuring the organizational structure has optimal communication. Though not the focus in this paper, it is suffice to say here that the technological advances in communication equipment and software over the past 20 years, has been tremendous. Essentially the development of the internet and GSM has changed how we communicate to such a degree, that our organizational development has yet to catch up.

TTS – Dissemination

The TTS time & space approach to dissemination is directly connected to the traditional military organization which is hierarchal in nature. The conventional C2 structure for the battlegroup in Helmand was no different, with several echelons of decision-making ‘stove-piping’ information flows to authorities not directly in control of actionable assets, but organizationally responsible for complete information to the next echelon. (See Fig. 6.0.)

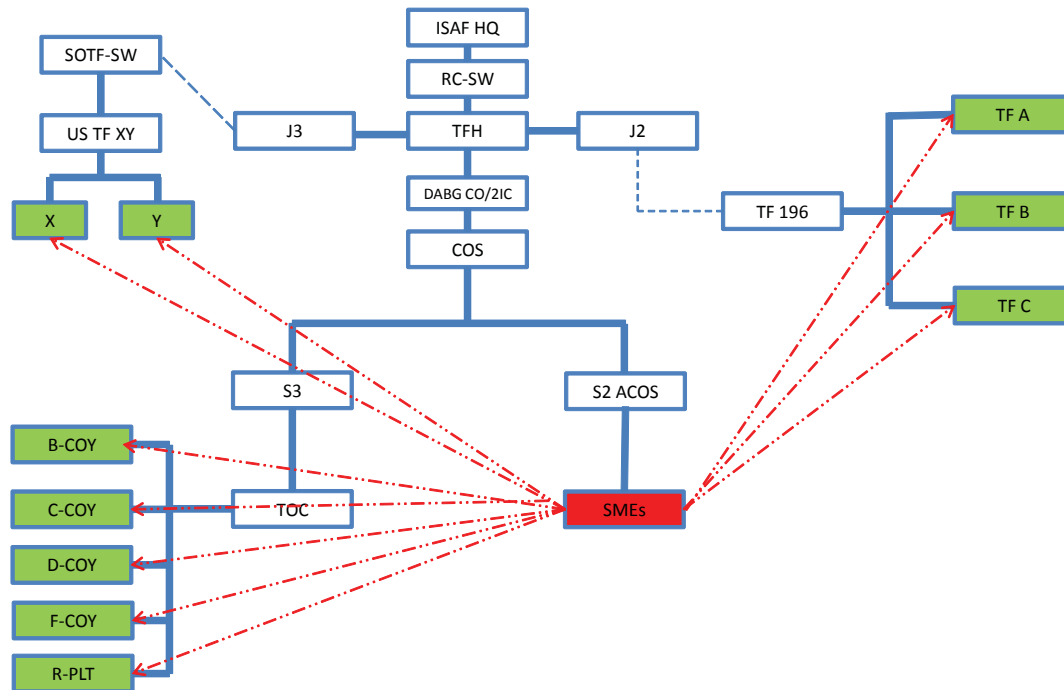
Fig. 6.0 TTS Dissemination Structure



SNA - Dissemination

Where it concerns the principles of battlespace agility, a SNA approach to the dissemination of knowledge identifies the decision-points consisting of the authority and capacity to take action, and exploits technology to insure that communication to those decision points are as immediate as possible. (See Fig. 7.0.)

Fig. 7.0 SNA Dissemination Structure



Summary- Dissemination

In a COIN environment, effective dissemination is essential to maintaining battlespace agility, as well as providing the basis for maintaining the initiative over the INS. Once the knowledge is produced it must be delivered in a timely manner to the capacity with authority to act, or an opportunity is lost. The ability to 'use it or lose it' is what defines effective dissemination in a COIN environment where INS have access to GSM based technologies. It is here the social organization plays the pivotal role on how effective dissemination of information will be. Timeliness tops the list of variables. *Action efficiency*¹³ and *action timeliness*¹⁴ based on the TTS approach to dissemination was dismal. Formal processes originating from the hierarchal system simply could react to dissemination in a timely or effective manner. Information simply was being communicated through too many filters before it arrived to the decision-point of authority and capacity.

Furthermore it was not only the structure in itself that created issues of dissemination, but a culture of information ownership an inherent characteristic of a hierarchal organization. Social organization must facilitate dissemination and not disrupt, or delay it. Ironically the INS had the advantage in this regard as they operated under a loose network C2 structure that is naturally better at exploiting windows of opportunity. It was also clear that our insistence on maintaining a conventional hierarchal social organization undermined our own technological ability to 'even' the playing field with the INS. It is here could really feel the absence of SNA approaches to organization the most, and it is here we would be forced to fall a few steps behind our opponents, reducing our effectiveness in the battlespace.

(13) Action efficiency refers to the extent to which actions executed are efficient in the use of resources.

(14) Action timeliness refers to the extent to which actions are executed at the time required by the plan or order.

Conclusion

This aside, where it concerns direction, SNA approaches supplemented by TTS approaches provide the best product. The TTS approach alone is not only insufficient, but on its own in a COIN environment, will likely distort the reality for decision-making, as well as the following phases of the intelligence cycle in terms of collection, processing, and dissemination.

Without any doubt the SNA based approach to intelligence processing within an EBT framework provided a more accurate picture of the battlespace than the TTS approach. It also improved the accuracy of the TTS understanding. This resulted in more effective and synchronised actions, producing more desired effects in all dimensions of PMESII.

Dissemination in a COIN environment is all about the speed at which knowledge can be delivered to the capacity with the authority to act. It in this regard it is fully dependent on social organisation and the exploitation of available technology to insure effectiveness. The TTS approach to dissemination was based on a social organisation that was hierarchal and built originally for optimizing through 'stove-piping' information. This was admittedly, a very effective approach when dealing with conventional situations where descriptions of fixed positions and numbers of men and material sufficed for planners to achieve the desired kinetic effects. The times have changed, and the TTS structure is not only inefficient for disseminating knowledge, it has in-built characteristics that frustrate the dissemination of intelligence and accelerates its deterioration.

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