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Web-shared confrontation and collaboration analysis for CMOs

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Abstract

Achieving effective decentralized C2 (DC2) has proved more elusive for the military than for its agile antagonists. While DC2 is a feature, for instance, of US Marine operations in Afghanistan, widespread adoption of Net Centric Operations as championed in the 2009 C2 Strategic Plan has been impeded by organizational structures and practices. Despite the ubiquity of mission command as a doctrinal principle, command cultures locally derail DC2.

Emerging web-enabled technologies can facilitate the shift to 'edgelike' C2 by enabling new patterns of interaction and information exchange. However, major cultural and policy changes are required to permit these technologies to deliver DC2. These challenges are greater in CMO where achieving shared situational awareness and self-synchronization must cross semi-permeable information boundaries.

More crucial still, collective C2 must not be achieved at the cost of unsupportable knowledge burdens imposed upon networked parties. This paper proposes that participants in Civil-Military Operations use a managed social network to share confrontation/collaboration analyses. The latter would be supported by existing software tools and represent knowledge-efficient briefings about the strategic conversations in which the corresponding party is engaged. This fundamentally reorients and updates earlier suggestions for a centralised C2 system for 'winning hearts and minds'.

Introduction

Vassilou (2010) summarised the progress that has been made by the United States military in shifting from a centralized, hierarchical C2 paradigm towards a net-centric approach, characteristic of what Alberts and Hayes (2006) have termed 'edge organizations'. He found evidence of the development and exploitation of technologies relevant to achieving such a move, but noted that the shift itself appeared to be hampered by prevailing organizational cultures. He observed that hostile forces have not been similarly constrained in their adoption of agile, decentralized decision processes and modes of operation and argued that this might offer them a strategic advantage. Naturally the picture is more complex than such a summary suggests, with patchy adoption of new approaches by the military and their protagonists alike, but if Arquilla & Ronfeldt's (2001) aphorism 'it takes a network to defeat a network' has any validity at all, then at the very least achieving 'edge' capabilities would appear to be one element of any robust strategy for our forces.

This paper assesses the general importance for the military of implementing net-centric approaches and their special relevance for Civil-Military Operations (CMO). Varied architectures of net-centric operations (NCO) appropriate to such contexts have been suggested and the pathways for, and barriers to, their development are considered. The recent technologies of social networking provide an opportunity to overcome some of the factors that have hampered the rapid realisation of NCO, but they also present fresh challenges that must be managed. Not the least of these is the information burden that they may impose upon knowledge-hungry users. The further development of earlier proposals for systems for Command and Control of Confrontation and Collaboration (C2CC systems) appropriate for combatants of the Internet Generation is proposed here as a way of managing this burden, and the form such a system would take is sketched.

Net- Centric Warfare: lost promises?
The concept of Net-Centric Warfare (NCW) that crystallised little more than a decade ago (Alberts et al., 1999), was shaped by three trends: hard questioning about the relevance of contemporary concepts of command; the technologically-supported proliferation of information; and the practical requirements of multi-party pursuit of collective objectives. Consider these factors in turn. Detaching the activity of command from the 'commander' as agent of this process, emphasizes the divergent demands of multiple leaders and highlights the potential of self-synchronization, while correspondingly de-emphasizing the unitary authority and idiosyncratically-wielded power of those at the apex of a hierarchy. Computer-supported information networking makes possible the simultaneous awareness and involvement in richly-connected interactions of physically dispersed actors contending to influence the hearts and minds of combatant and civilian, social and task-oriented coalitions and groupings in a boundary-less battlespace. The tackling of major security challenges by multinational forces over the past

two decades, as a more delicately nuanced balance of power supplanted the crude bipolarity of the Cold War, has become commonplace for political as well as for logistical reasons, bringing with it new needs to impart coherence to ragged alliances. Taken together these drivers have energised a powerful narrative that challenges deeply embedded practices of command and control.

For situations that are primarily military in character, the principles of NCW have been instantiated in special forces teams, endowed with the right to take whatever decisions they judge appropriate to act in the complex and dynamic situations that they may face, drawing upon promiscuously shared information while working from a deep foundation of shared beliefs and values. However, while precepts of *Power to the Edge* (Alberts and Hayes, 2003) have gained general approval, they have not yet been widely or rapidly implemented. This has created a degree of scepticism about the whole NCO 'project', despite its vociferous defence by influential champions. Stulberg (2009) argued that such a negative judgement on NCO is premature. He suggests that a major obstacle to realising its potential has been a failure to recognise first that NCO complements rather than supplants conventional approaches, and second that there is no single 'correct' architecture for NCO design. In respect of the first misconception he states five 'myths':
- NCO is a panacea for the 'fog of war'
- Metcalfe's Law (each extra node rapidly grows network effectiveness) applies to NCO
- NCO is to warfare what e-business is to business or networks are to terrorism
- NCO is synonymous with shared situational awareness and self-synchronisation
- NCO constitutes a paradigm shift for force planning

Taken together, Stulberg asserts, these claims have done NCO a grave disservice and fail to recognise the practical challenges posed by uncertainty and information asymmetries.

To reclaim the future of NCO Stulberg proposes a taxonomy of NCO C2 architectures based upon their location along the two dimensions of centralization and redundancy. The former axis is equivalent to the 'allocation of decision rights' in the C2 Approach Space proposed as one of their three dimensions by Alberts and Hayes (2006) but redundancy – the presence or absence of multiple, independent nodal relationships that possess identical social attributes' is a distinctive concept that does not map exactly onto the other two dimensions (patterns of interaction and distribution of information) in Alberts and Hayes's framework. Stulberg provides examples of practically effective NCO systems (e.g. time-sensitive targeting, infantry fire support, situationally-aware hierarchical swarming) located in different areas of his domain of architectures, and concludes that the military must be more flexible in implementing novel NCO forms while being prepared to address the very real challenges faced in managing principal-agent problems and other issues relating to centralization and co-ordination. This call for adaptability echoes Vassilou's recognition (Vassilou, 2010) of the varied locations taken by military and adversary entities in Alberts and Hayes's C2 Approach Space. However the author also stresses the institutional and cultural resistance that such a move may face despite the dissolution of other barriers by technological innovations.

Net Centric Approaches to Civil- Military Operations
The displacement of interstate industrial war by the more complex processes shaping 'war amongst the people' (Smith, 2006) requires effective management of fragile, often expedient collaborations in pursuit of rapidly-evolving aims using hastily and often locally improvised resources.
Many 21st Century missions involve the military as just one of a closely coupled set of parties whose collaboration alone can deliver the outcomes that all would desire. Civil-Military Operations (CMO) are central to achieving stability, especially in situations involving asymmetric threats. They include (JCS, 2008) operations providing support for civilian administration, populace and resources control, foreign humanitarian assistance, nation assistance and civil information management. Loosely labelled as Operations Other Than War (OOTW), such missions potentially showcase the beneficial synergies of pooling diverse wisdom and experience and of exploiting complementary capabilities.

Unfortunately such complex endeavors (Alberts and Hayes, 2007) may expose the divergent ideologies, cultures and values espoused by the partnering bodies. Furthermore an absence of mutual trust and actual or perceived imbalances of power and authority can undermine even the best-intentioned alliances. Additional laminations of vulnerability may appear over information sharing: military and intelligence organizations are constrained in sharing classified information and this necessarily privileges them; and when radical or even potentially subversive groups have been admitted to a broadly-based initiative they will be wary of the risks of prosecution or retribution to which such involvement may expose individuals or sub-groups. Haugevik and de Carvalho (2007) summarised the special obstacles commonly encountered in Multinational CMO, identifying civilian and military actors' lack of knowledge of one another's organizational identities (i.e. traditions, cultures, images and fundamental goals), security concerns (e.g. tensions between impartiality and freedom of information) and working procedures (such as determining end-goals and developing 'business' plans) as critical challenges. To succeed in countering these frailties an endeavour must have a clear meta-strategy (Huxham and Macdonald, 1992) – that is, its own explicit rationale for creating collaborative advantage - as well as effective processes for sharing awareness and understanding (Hayes, 2007) of unfolding events.

In CMO, as in purely military operations, networking approaches and capabilities hold the potential to transform the principles and practices of mission control, yet the difficulties of achieving this are clearly even more severe that in the less chaotic arena where NCO has been pioneered. Specifically, as de Spiegeleire and Essens (2010) have suggested, there are implications both for the armed forces (which will have to become more 'modular' and 'loosely coupled') and for the relationships between those undertaking complex endeavors (which will have to be more trusting and characterised by mutual respect, accommodating a much greater degree of autonomy and self-organization).

Interaction in CMO
Complex endeavors involve an ever-changing set of inter-related parties addressing recognised, anticipated and emergent issues. While there may be some degree of consensus over goals, the level of agreement over means can be slight and commitment to action may be inconsistent and uncertain. Considering the typical stakeholders, Hayes (2007) differentiated between a 'center' comprising a compact group of relatively well-aligned parties, a penumbra of 'cooperating actors', unreliable 'friends of convenience', neutral parties (whose apparent lack of interest or power may be mobilised by changed circumstances) and adversaries or problems that the endeavor is seeking to address. What goes on in such an endeavor is interaction: interaction between allies; interaction between reluctant collaborators; interaction between forces and their adversaries. While some small number of these interactions may involve ballistic exchanges, the great majority involve the exchange of messages between parties as they seek to exert influence upon each others' thinking and actions. Indeed physical interaction usually represents a regrettable failure to prevail in some related psychological interaction.

The task facing every participant in a complex endeavor is to manage their interactions, usually to their own benefit. This task requires the successful management of multiple confrontations. Each confrontation (Howard, 1999) is an arena in which participants (hereinafter referred to as 'characters') communicate strategically as they encourage others to adopt their solution to the situation (called their 'position'). Their inducements may include threats or promises of the unilateral action (called their 'stated intention') that they would take if their position is not accepted. Typically interactions begin with a confrontation in which different characters' positions are incompatible, but this may be resolved by agreement providing a basis for collaboration. However there may still be distrust between characters about their preparedness to undertake the measures to which they have consented before final dissolution of the interaction through their actions can be achieved. This process is shown schematically in Figure 1. Normally the several interactions in which a character is caught up at any time will be related: possibly the same 'others' may feature in more than one of these situations and so the possibility of deals being struck (Khalifa, 1997) on a *quid pro quo* basis exists. However for the immediate purposes of exposition here an interaction will be examined in isolation, before any cross-impacts are considered.

Confrontation Analysis
When character's positions and stated intentions in an interaction are mutually understood and established the characters will usually find that they face one or more discomfiting 'dilemmas' arising from the pressure of the exchange. Confrontation analysis (Howard, 1999) elucidates these and shows how they may be eliminated. The approach is best demonstrated through an illustrative, fictional example.

A longstanding Middle Eastern regime that has been a friend to US interests comes under internal pressure for democratic reform from its population. Its elderly, autocratic head of state is determined to remain in power and repress opposition, purportedly to maintain regional stability, but clearly also in the self-interest of the ruling dynasty. Encouraged by the recent success of similar uprisings in neighbouring countries the population are determined to oust the government through peaceful protests, seeking to put in place a new democratically-elected government (whether this would be secular or religious in nature is unclear). The army are sympathetic to the popular position and their loyalty to the government is uncertain. The US Secretary of State is pressing the government to make concessions in line with popular sentiment and is concerned about the possible complexion of the leadership should the government fall.

This situation is modelled in Figure 2, which shows an 'options board' that represents the positions of each character (as columns) and their stated intentions (in the second column from the left). This can be read as follows. In the leftmost column are the options (action choices available) for each character. In the body of the table each cell contains either a filled-in square, an open square or a dash. These correspond respectively to that row's option being adopted, being rejected or no view being declared on the option, within the context of the potential future state that the column represents. So the third column from the left, which represents the US position, indicates that the US is encouraging liberalisation and wishes the government to concede reforms, while preferring the army to stay loyal to the government though being permissive about popular protests. The neighbouring columns can each be read in a similar manner, though the column headed 'SI' is different as it does not contain not any one character's position but brings together the separate declared intentions of all the characters. So it indicates that if the US does not get its way then it would both continue to encourage liberalisation while courting the opposition; if the government cannot prevail then it would still stubbornly refuse to step down; and so on. Some cells contain question-marks. These represent that some parties have doubts about whether a declared choice (adoption or rejection) of the option would actually be implemented by the character whose option it is. For example, the population is shown as doubting whether the government would lastingly concede reforms (mark shown against those cells showing adoption of 'concede reforms' option by the government). Note that Figure 2 is a bespoke model that captures the assumed particularities of a specific example, not a generalised statement about civil unrest in Middle Eastern autocracies.

Inspection of the options board shows that the army's position is compatible with – it is not in conflict with - both the position of the US and of the population (though these are not compatible with each other). However the other interactions reveal incompatibilities: confrontations. Unless something gives, the stated intentions will be played out: there will be an impasse from which the situation will deteriorate. According to drama theory there are

three types of dilemma[1] that may be encountered by a character at such a 'moment of truth':

When there is confrontation then if:
- Character A is sure that Character B won't support its proposal.
  i.e. What can A do to elicit B's support?
  then A has a Persuasion Dilemma with B
  Character B doubts that Character A will reject B's proposition
  i.e. What leverage has A got to stand firm against B?
  then A has a Rejection Dilemma with B
These two dilemmas can either be in Position or Threat Mode depending on their source.
When there is collaboration then if:
- Character A can't be sure that Character B will do what they've agreed
  i.e. How can A deal with a character who may renege?
  then A has a Trust Dilemma with B

The options board of Figure 2 presents dilemmas for all characters. These can be derived by analysis of the board and for the example are set down in the rightmost column. So, for instance, the US has a Persuasion Dilemma in Threat Mode with the Government over the latter's present refusal to concede reforms: this is because it sees the government as under no pressure to shift stance on this option.

Each dilemma causes discomfort for the corresponding character and according to drama theory (Howard, 1994) it will seek to eliminate the dilemma. The ways in which this can be achieved cannot be enumerated since they involve 'thinking outside the box': that is, changing the options board (e.g. by involving fresh characters, inventing options, removing doubts, altering positions or stated intentions, etc.). Generic routes by which the US could overcome its Persuasion dilemma with the Government, are shown in Figure 3. Pursuing this particular dilemma, the US could, for example, adopt a more overtly directive approach and threaten to tie economic support for the government to progress in making democratic reforms (i.e. add this option into its stated intentions). This might shift the government's position to 'concede reforms' though there could still be doubts about the sincerity of such a move and these would in turn create trust dilemmas for the doubting characters.

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[1] This paper uses the latest version of drama theory, commonly referred to as DT2, in preference to the earlier 6-dilemma version (DT1) that has appeared until recently in the majority of publications. Exact definitions of the three dilemmas used in DT2 can be found in Levy and Howard (2009). DT2 eliminates the redundancy that can be generated in DT1 analysis. More significantly, dilemmas are established in DT2 with respect to each option, rather than by global comparisons of positions and stated intentions, and there is no need for (often heroic) assumptions to be made about characters' preferences between possible future states.

Commercial software tools such as *Confrontation Manager*[2] can be used to carry out the analysis to identify such dilemmas and provide text advice as to how each character may achieve its objectives. This would indicate the purpose of, and appropriate tone for, the messages which a character should send to others in order to move closer to its own desired outcome as well as the 'defensive' messages that it ought to transmit in order to reduce the effectiveness of adversaries' messages.

Mission Management
Characters in most situations, and especially in CMOs, need to juggle multiple simultaneous and sequential interactions; the latter especially as confrontations seldom dissolve - they usually mutate. Note too that the positions declared, the threats and promises issued and the choices offered or made by a character are almost invariably circumscribed, constrained or influenced by the messages which that character receives from other characters, notably of course when these others stand in a position of relative authority. So while the way that a soldier deals with a confrontation at a roadblock must ultimately be determined by him, the implicit message that the chosen resolution sends should be consistent with the wider messages that his company commander has been sending to the local community and these in turn should cohere with messages initiated at battalion and higher levels.

In order to achieve coherence of strategic communications (Bryant and Howard, 2007) C2 systems for managing confrontations based on the drama theory paradigm have been proposed. Murray-Jones and Howard (1999) first sketched the concept which they illustrated through an example extending through multiple levels of the command hierarchy in the Bosnian conflict. The emphasis in this early paper was upon explaining the principles of confrontation modelling and dilemma resolution, and the relationships between the options boards representing the confrontations faced by different characters was treated in less detail. However, the authors' vision was for a C2 system in which options board models would be maintained and transmitted over a network. Development of these models would be carried out for its own confrontations by each level of command, but to maintain consistency each local commander's core model would be elaborated from that passed down from his superior. The local commander would also develop new linked models representing specific confrontations being managed at his own level, some of which in turn might form the basis of others delegated to his staff.   By means of sharing downwards a simple model containing just two columns, one representing the default future (what happens if all characters carry out their present intentions) and the other showing the superior's objective, a commander is told what he is to achieve but given freedom as to how this is to be done. Six years later a

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[2] available from Idea Sciences, 205 The Strand, Alexandria VA 22314-3319. Tel (703) 299-3480. Fax (703) 299-3485. Website: www.ideasciences.com

more developed system was proposed (Crannell et al., 2005) now drawing on the capabilities of the *Confrontation Manager* software. A new idea introduced here was that the system would consist of a number of 'views' each holding the 'higher-level', 'own-level' and 'delegated missions' for a given command (respectively representing contextual, task and commissioned confrontations/collaborations). Updating, refinement and development of all models would be communicated to other levels, with specific warnings being provided where these changes impacted upon other boards. Each commander would have a clear sense of all the boards above him in the hierarchy – right up to the President – but only down to those being managed by his immediate subordinates. Importantly the paper pointed out that the C2CC system could be used to support joint planning and operations with other parties including non-military agencies, provided that militarily confidential information is first screened out before transmission.

The Impact of Social Media
The past five years have seen an astonishing take-up of social networking tools. Services like MySpace, Facebook and Twitter as well as locations such as YouTube have developed to become the preferred medium for peer-to-peer communication amongst the so-called "Digital Natives" generation. Most recently the term 'social business network' has gained credibility (Roberts, 2010) in recognition of the opportunity that social networking tools offer to involve employees in real-time collaborations and knowledge sharing. These technologies are displacing e-mail and earlier document-sharing processes while opening new means for employees to contribute their views and wisdom through forums, blogs and instant messaging. While most such networks are internal and closed, organisations face a tension over such impermeable boundaries through the relentlessly increasing pressure to network more effectively with external stakeholders, be they shareholders, suppliers or customers.

The personal acculturation of those in the armed forces to virtual social networks has put pressure upon the defense community to provide access from work to social media sites. The Department of Defense has a hub dedicated to social media and maintains through its components thousands of Facebook pages following the issuing of a permissive memorandum (DoD, 2010). While present policy only relates to non-classified networks and can be locally rescinded what is most significant about it is the cultural change that it represents. Internally, systems such as award-winning MilBook[3] complement public services by enabling knowledge transfer and collaboration within a firewalled network. Social networks are believed not only to improve inter-communication but possibly to enhance trust between

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[3] MilBook received the 2010 Army Knowledge Management (AKM) Award in the technology category at a ceremony on August 3 during the LandWarNet Conference at the Tampa Convention Center in Tampa, FLA.

group members (Crebolder and Randall, 2010) and such indirect payoffs could be of clear importance in the context of military interoperability.

Social networks have also rapidly established a key role in CMO. A good example was the standing up of the All Partners Access Network (APAN) by SOUTHCOM following the Haiti earthquake, to coordinate disaster relief efforts involving more that 300 separate government and non-governmental organizations. The tools provided helped to connect those in need with service and resource providers, and massively facilitated information flow. APAN had previously been trialled as part of the Interagency Shared Situational Awareness Limited Objective Experiment in mid-2009 to examine the sharing of information across the range of disaster responders including the military. This latter is the type of context for which facilities such as SKIWeb have been developed, offering a net-centric, asynchronous, globally available, collaborative event service to authorized users.

Managing Confrontation and Collaboration through Social Media
The separate strands that have been introduced above build almost inexorably to the present proposal for the explicit management of confrontation leading to collaboration. These strands are:
• the distributed nature of responsibility and command in CMOs
• the timeliness and technological readiness of net-centric operations
• the need for variety in net-centric architectures
• the centrality of trust for melding complex endeavors
• the inevitability of confrontation, even in co-operative missions
• the insights that confrontation analysis offers for handling differences
• the importance of aligning strategic communications
• the emergence of social media as a dominant interpersonal culture
The networked system proposed here draws together these elements to create a complex, self-organizing, responsive process.

The purposes of such a system have been summarised by Murray-Jones and Howard (1999) as being to enable a commander to bring about a resolution of a CMO in line with his objectives. They proposed a system that would: 'model confrontations and linkages between them, analyse dilemmas and methods for eliminating them … formulate a Confrontation Strategy, devolve it to lower levels of command, co-ordinate strategies between linked confrontations, communicate new intelligence or strategy between levels of command and linked confrontations, brief newly-arrived officers on current confrontations and strategies for resolving them, and understand how confrontations were or were not resolved, enabling lessons to be learnt and training given.' However their specification and its proposed instantiation sketched in a contemporary paper by Stubbs et al. (1999) made two assumptions that no longer seem appropriate: first they use an architecture that includes a 'central confrontation database', which as Stulberg (2009) pointed out is inapt in most NCO; second they privilege the military as (at the very least) *primus inter pares*, which is seldom true for today's CMOs.

It is now proposed that participants in CMOs work together using a self-managed social network. Indeed, depending upon the security requirements of the operation, it is even possible that an existing proprietary solution such as Facebook or MilBook could be used, rather than establishing some quite separate networked system. The system would have the familiar functionality and appearance of present-day social media: on registering, users would declare a profile and then have access to spaces where information, messages, images and clips could be placed. An additional tab labelled WWY (for 'What's With You?') would be present and this is where options boards would be posted representing the member's perception of the ongoing confrontations/collaborations in which they are engaged. Every board represents a relationship with one or more other members of the network and depending upon the privacy settings used could be shared or kept private.

How would such a system function? Consider the aftermath of a natural disaster that has devastated a vulnerable region in a developing country: local infrastructure has been hit hard, energy and water services are uncertain and food supplies disrupted; relief agencies are struggling to deal with immediate needs. Taking advantage of this catastrophic backdrop, the rule of law is being challenged, both by looters and as a result of the flaring up of long-suppressed ethnic conflict in a number of localities. The military is working closely with other agencies to facilitate the relief effort. In this situation, as in the Haitian case cited above, the disaster relief organisations could clearly coordinate their efforts using established social networking processes. Awareness of changes could be posted in real-time, alerting relevant personnel to available resources, emerging problems and policy updates. However such an approach fails to provide support for addressing the tensions that would inevitably arise between the numerous parties involved, for instance regarding priorities for action and the means of addressing these needs, still less for doing so in a consistent manner. Nor does it mutually engage the communicating parties, who can simply exchange information without necessarily developing a sense of a shared predicament demanding joint attention. The solution is for participants to use drama-theoretic tools to interpret, negotiate and address the CC (Confrontation leading to Collaboration) episodes.

Suppose that a local Commander has been given the mission of re-establishing order in a contested area. He sees an essential part of this task as involving the containment and targeting of those inciting ethnic hatred. However aid workers protest that this intervention is hampering their attempts to move freely and relieve pockets of desperate need. Either party could construct a CC Model of this interaction: suppose that Figure 4 is the Aid Agency's model. They believe the Commander faces dilemmas because (1) the agency doubts that he will actually impose a ban on aid movements, and (2) their aid workers support the unconditional distribution of support to all villages. Further suppose that the Commander's model is identical apart from a reversal of these doubts: he is determined to prohibit movements if his position is rejected; and he doubts that the agency will defy a ban and

attempt to distribute aid. Then if each party posted up its model (but with the doubts omitted) in the WWY area of its network profile this could form the basis for an exchange between them as they attempt to arrive at an agreement. Each would be able to use its own private model and software support in the background of this negotiation, but the intention would be to work towards a single shared model showing a joint position. Since neither side will wish to admit that it faces any dilemmas it will need to produce evidence and rational arguments in the common interest to convince the other party that it indeed has no dilemmas. And if there is still lack of conviction on either side then it is up to the unconvinced party to use arguments and evidence to show why it is so. If and when an agreement is reached then depending on the deal this may have implications for other geographical areas or at other levels within the organisations, so the final options board would be shared with relevant parties.   It turn it might be impacted by developments elsewhere and so these would be posted to the parties upon whom we have been focussing here. The principle being that CC models provide the medium of communication about changing relationships within the network.

Conclusion
The sort of collective C2 that is essential in CMO must not be attempted at the expense of information burdens being imposed upon those involved. The proposal of this paper is that existing or modestly tailored social network technologies could be used to provide the basis for the process of interaction between erstwhile collaborating parties, and that the content of the collaboration could be negotiated between them using specialist software for CC modelling embedded within the social networking systems. The proposal fundamentally reorients and updates earlier suggestions for a centralised C2 system for 'winning hearts and minds': instead of a centralised database of interactions, CC models are located around the network and accessible on a 'need to know' basis. This removes the vulnerabilities associated with a monolithic system and reduces the information burden for individual users. Such redundancy as would exist would not detract from the effectiveness of the overall system. Because the proposed system would be integrated within the sorts of everyday social networking solutions with which the majority of those now involved in front-line operations are routinely accustomed the management of CC would be seen as a natural part of relationship management rather than as being a separate, even arcane, activity in defense analysis. Such cultural resistance as might be encountered would most likely come from commanders wedded to outdated concepts of C2, rather than from the user base.

This paper has skirted over the very real issues of information security and disclosure in the interests of setting down a broad concept. This is not to minimise the challenges, but it may be observed that there is rapidly growing experience of managing such social media across sensitive arenas and that this should not be seen as an inhibitor of the proposed development.
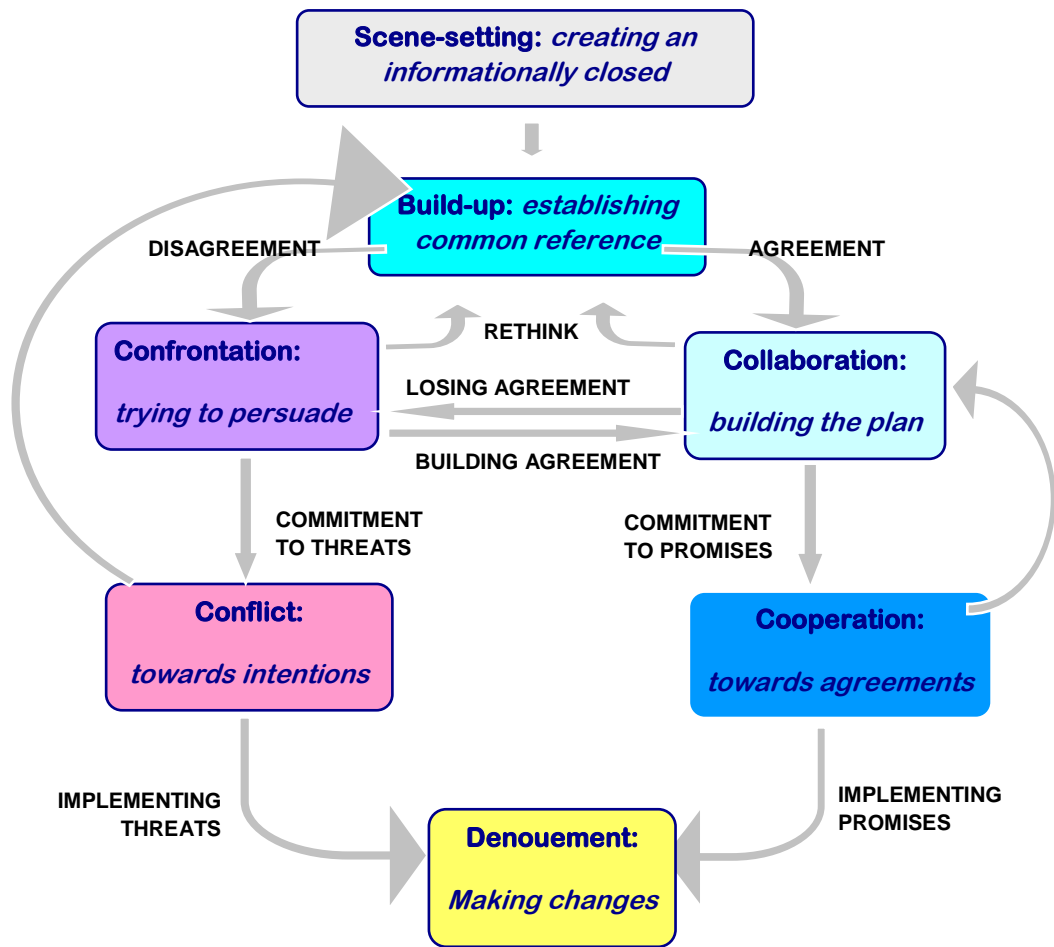
Figure 1

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	S.I.	US	G	P	A	Dilemmas
US						
Encourage liberalisation	? ■	? ■	□	~	~	
Extend opposition contacts	? ■	~	~	~	~	
Government						
Concede reforms	~	? ■	□	? ■	? ■	US, P, A have Per(t) with G
Step down	□	~	□	? ■	~	P has Per(p) with G
Population						
Protest against government	■	~	□	~	~	G has Per(t) with P
Army						
Support government	? ■	? ■	? ■	□	~	US, G have Trust with A A has Rej(t) and Rej(p) with P
Permit protests	? ■	? ■	□	? ■	? ■	P has Trust with A

Figure 2
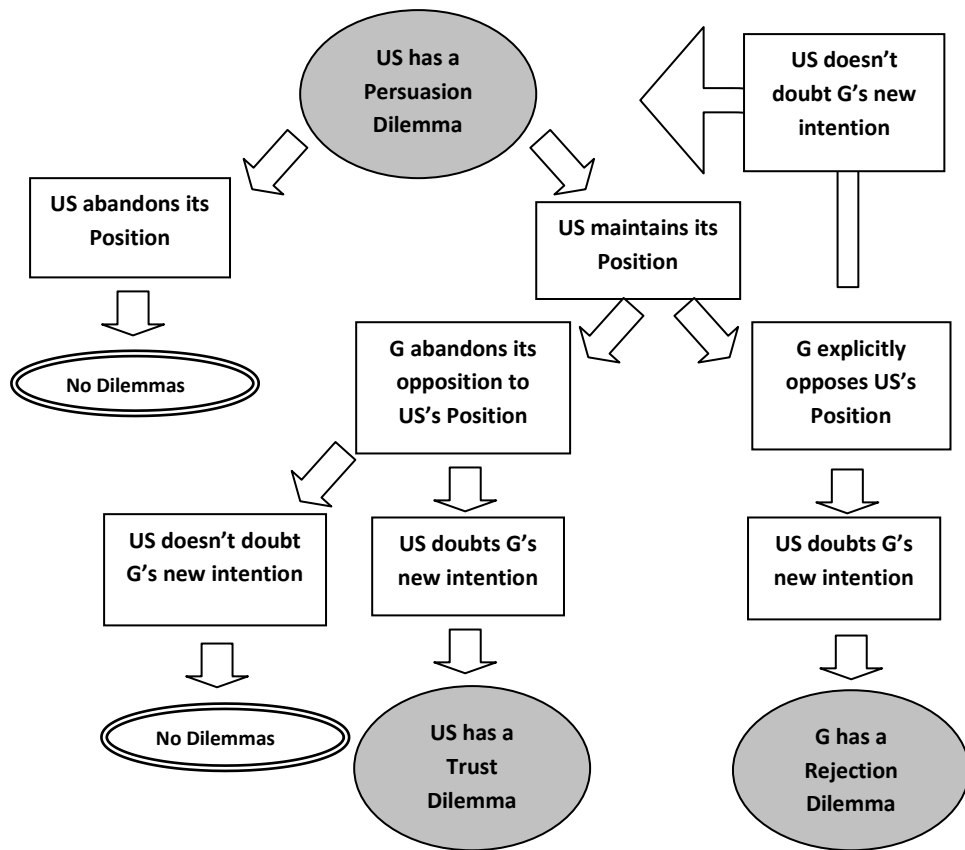
Figure 3

	S.I.	M	AA	Dilemmas
Military				
Permit free movement	? ☐	~	■	M has Rej(t) with AA
Contain insurgents	■	■	~	
Aid Agency				
Distribute aid	■	☐	■	M has Per(p) with AA

Figure 4