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The Evolution of C2**

The Evolution of Command Approach (Paper 192)

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Abstract

In previous papers the author and his collaborators have built on the work of other investigators to develop a deeper understanding of the issue of command approach. It has been observed that the way in which command is exercised differs, often substantially, between and within national elements. Recently, a theoretical discussion was advanced to examine whether forces might usefully have several modes of operation based upon differing levels of centralization and dependent on situational factors that introduce risk or opportunity. This paper will build on this previous work. In order to address the question *where have we been?* a summary will be provided of the evolution of command approach from a human-centric perspective. It will discuss how command approach has been influenced by all lines of capability development including technology. It will then draw on this analysis with a view to addressing the question of *where are we going?* Our understanding of the evolution of command approach will be exploited to present an appreciation of how the challenges of the contemporary and likely future operating environments will shape how command is exercised. Particular emphasis will be given to the likely requirement to exercise command of a non-kinetic line of operations.

Introduction

Mission command is a command approach that is based upon the exercise of local initiative within the framework of command intent. This is enabled by an appropriate delegation of authority and responsibility that allows subordinate commanders the latitude to plan and conduct operations based upon their understanding of the local situation. A number of authors have examined the different command approaches that are available¹. At the heart of most of these discussions is the key issue of the extent to which command authority is held tightly at the organisational core or is delegated to subordinates as in mission command. The former class of command approach is commonly referred to as 'centralised' and the latter 'decentralised'. Forces that have the capability to adopt decentralised approaches, such as mission command, retain the advantage in the contemporary operating environment owing to their ability to adapt their tactical activities rapidly as situations evolve.

In previous papers the author and his collaborators have built on the work of other investigators to develop a deeper understanding of the issue of command approach. It has been observed that the way in which command is exercised differs, often substantially, between and within national elements². Recently, a theoretical discussion was advanced to examine whether forces might usefully have several modes of operation based upon differing levels of centralization and dependent on situational factors that introduce risk or opportunity³. This paper will summarise and build on some of this previous work. In order to address the question *where have we been?* a summary will be provided of the evolution of command approach from a human-centric perspective. It will discuss how command approach has been influenced by all lines of capability development including technology. It will then draw on this analysis with a view to addressing the question of *where are we going?* Our understanding of the evolution of command approach will be exploited to present an appreciation of how the challenges of the contemporary and likely future operating environments will shape how command is exercised. Particular emphasis will be given to the likely requirement to exercise command of a non-kinetic line of operations.

A brief history of mission command

Much attention has been focussed upon the way in which the German army harnessed auftragstaktik to such effect in the early stages of WWII. Mission oriented command approaches of this type are a logical response to a number of limitations of control. For example as battles ceased to be set pieces, as speed of manoeuvre of tactical formations increased and the geographical dispersion of

¹ For example: Van Creveld (1985). *Command in War*. Cambridge, MA: Harvard University Press.
Alberts, D. S., Hayes, R. E. (1995). *Command arrangements for Peace operations*. Washington DC: CCRP Publications Series.

² Stewart, K. G. (2009). *Mission Command: Problem bounding or problem solving?* *Canadian Military Journal*. 9(4).

³ Stewart, K. G. (2006, Nov). *Mission Command: Elasticity, equilibrium, culture, and intent*. DRDC Toronto, TR 2006-254.

conflict spread across a broad frontage and in depth, it became impossible for commanders to maintain an adequate appreciation of the tactical situation⁴. Advances in communications technology improved this situation gradually, for example Guderian's tanks used radio to gain tactical advantage, nevertheless by the start of the 19th Century, centralised real time command was becoming a practical impossibility.

Bungay⁵ provides a comprehensive description of the development of - what came to be known as - 'auftragstaktik' by the Prussian and, latterly, the German armies in the Nineteenth Century. Following heavy defeats in 1806 at the twin battles of Jena and Auerstedt substantial effort was expended by the Prussians in rethinking their approach to military operations especially their philosophy of command. Central to this process was the Military Reorganisation Commission that was chaired over the course of the next 6 years by Major General Gerhard von Scharnhorst, originally a native of Hanover, but, owing to his reputation as a military thinker and officer, persuaded into the service of the Prussian King Frederick William III following the Peace of Basel in 1795. Scharnhorst set about surrounding himself with reform-minded individuals and divesting the Commission of the more conservative elements of the Prussian officer classes. For example, Col August von Gneisenau, who was later Blucher's chief of staff, was added to the commission in 1806 and in 1808 von Grolman, von Boyen were likewise recruited. Karl von Clausewitz, then a member of Scharnhorst's personal staff, was appointed secretary to the Commission in 1808. It was observed that, compared to their own centralized, process-oriented, command and control system, the French achieved high tempo through rapid communication of Napoleon's intentions and rationale. Perhaps most important, the exercise of initiative by junior officers was tolerated. "Napoleon was able to communicate very rapidly with the Marshals because they shared a basic operating doctrine, and he explained his intentions as well as what he wanted them to do. He expected them to use their initiative and act without orders in line with his intentions. They did. The result was an operational tempo which left the incredulous Prussians bewildered."⁶ Likewise, Storr⁷ quotes Dupuy who emphasised that French success in 1806-07 were based on the "complete and aggressive responsiveness of French commanders to the will of Napoleon ..., even without orders, and miles distant". (p81)

⁴ For example, Dupuy (1980) proposes that in antiquity an army of 100,000 persons would have occupied an area of 1 km² with a depth of 0.15 km over a front of 6.5 km. By the Napoleonic wars he suggests that these figures would have risen to an area of 20 km² with a depth of 2.5km and a front of 8 km and by World War II the same number of personnel would have occupied an area of 2,750 km² with a 48km front at a depth of 57km. Dupuy, T. N. (1980). *The evolution of weapons and warfare*. Indianapolis: Bobbs-Merrill.

⁵ Bungay, S. (2005, Summer). The road to mission command: The genesis of a command philosophy. *The British Army Review*, Vol 137, p22-29. (In his review Bungay draws heavily upon source material written in German - detailed citations are provided.)

⁶ Bungay (2005), p137.

⁷ Storr, J. (2003, February). A command philosophy for the information age: The continuing relevance of mission command. In D. Potts. *The big issue: Command combat in the information age*. Strategic and Combat Studies Institute occasional paper number 45.

The Prussian Field Service Regulations (Exerzier Regiment) that were published in 1806 introduced, for the first time, the notion of 'directive command', the idea that a commander should issue only general orders outlining his intent and leave to the subordinate the formulation of how that intent should be achieved. Although the reforms had to be undertaken in the face of supervision and restrictions dictated by Prussia's new French 'allies'⁸ substantial progress was made. The 1812 Prussian Infantry Drill Regulations abolished the set-piece conduct of battle and stressed the importance of independence of thought and action at the higher levels of command⁹. Nevertheless, it should not be supposed that this philosophy was universally applied at all levels in the Prussian Army; decentralisation was focused on the higher levels of command. Widder notes that "For the lower levels of command, column tactics, with its massive bodies of troops, continued to impose severe limits on the conduct of battle" (p4). The reform of the Prussian officer corps that began after Jena and Auerstedt continued in the period of relative peace that followed 1815. Notable contributions were made by von Clausewitz and von Moltke. In 1832, von Clausewitz published 'On War', a collection of ideas that were influenced by his experience of the Napoleonic campaigns, notably the idea that war is chaotic and frictional and that this is likely to undermine pre-existing plans and arrangements. This observation was key in an era where military forces were growing and subdividing into separate, permanent, formations that could be manoeuvred separately away from the battlefield and concentrated rapidly in an attempt to force decisive battle on an opponent. In such an organisation, geographical distribution made it essential that authority for the exercise of command initiative should be delegated to the formation commander with a view to exploiting opportunity and managing surprise. Military forces were too large and communications systems too rudimentary and slow to allow for efficient centralised control. Much else changed after Jena / Auerstedt.

Central to this code was the notion that a system that depends upon orders as the sole means for providing direction to subordinates is likely to be both inefficient and ineffective. Instead, support was developed for the idea that provided with an understanding of the commander's intention and his rationale, subordinate personnel could formulate their own plan of action for the tasks they were allocated. Underpinning these primary ideas was a system of values and beliefs - in modern terms, a culture – that enabled Prussian officers to exercise independence of mind¹⁰. For example, officers were expected to exercise 'thinking obedience', and even, where appropriate, to question authority. Moreover, autonomy and initiative were not discouraged by censure, direct or

⁸ For example the 1808 Treaty of Paris forbade Prussia to institute conscription.

⁹ Widder, W. (2002, September-October). Auftragstaktik and innere fuhrung: Trademarks of German leadership. Military Review.

¹⁰ Retired Canadian LCol Chuck Oliviero has written extensively on the cultural and organisational underpinnings of auftragstaktik, e.g. Oliviero, C. (1998, August). Trust, manoeuvre, mission command and Canada's Army.

indirect. The belief that mistakes were preferable to hesitancy enabled decisive, bold action. However, it should not be imagined that the Prussians allowed a complete free for all. Rather, the idea was that control was exercised via bounded initiative. Von Moltke, who Bungay dubs the 'true father of Auftragstaktik', emphasised that he wanted to 'steer' initiative in the right direction. The way in which this was achieved is as relevant to enabling decentralised command in the 21st century as it was in 19th century Europe. Decentralisation requires investment across all lines of capability development, especially personnel¹¹. Moreover, the necessary investment is not simply a question of financial and material resources – time is critical in the development of both individuals and organisations¹². Thus, a junior Prussian commander exercising his initiative on the battlefield was most likely drawing upon a variety of resources at his disposal including: i. his understanding of his commander's explicitly stated directive that would have provided him with an appreciation of the situation, a specific task, and a description of the commander's intentions; ii. his beliefs about his organisation, his role within that organisation, and the degrees of freedom available to him in the exercise of that role; iii. his expertise in the technical aspects of the military profession and iv. his understanding of his commander and his peers. These latter aspects, among others, which are captured in Pigeau and McCann's¹³ notion of 'implicit intent', would provide him with the basis for his course of action decision. In particular, this tacitly held knowledge would (again in Pigeau and McCann's terms) bound the solution space available to him.

Bungay's article is refreshing in that, rather than presenting auftragstaktik as based on a self-evident logic, he reflects the strenuous debate that accompanied its development. Of particular concern was the question of how to maintain control while enabling independent action. Exacerbating this tension in the early Nineteenth Century was the requirement further to loosen formation in response to the increasing range and accuracy of small arms. Change was necessary; close-order formations, no matter how disciplined, were outmoded in the face of high velocity bullets. As ever, technological change forced organisational and process adaptation. Bungay notes that 'cohesion was on a knife edge' and that, although, on the one hand there was the belief, attributed to von Moltke, that action can be unified by the higher commander's intent, on the other it was clear that smaller units and formations required individual missions and tasks within that higher intent. The literature demonstrates that this lesson was re-learned

¹¹ Indeed, this remains the case – even in the era of high technology!

¹² As Morton (2003) observes "military futures matter in peacetime because that is when both weapons and warriors are developed...A tough infantry sergeant who knows how to fight and how to make others fight can take up to 15 years to train, though the British now claim they can do it in ten years" (p190). Morton, D. (2003). *Understanding Canadian defence*. Penguin.

¹³ Pigeau, R., & McCann, C. (2006). *Establishing common intent: The key to co-ordinated military action*. In Allan English (ed.), *Leadership and Command and the Operational Art: Canadian Perspectives*. Kingston, ON: Canadian Defence Academy Press.

Pigeau, R., & McCann, C. (2000). *Redefining Command and Control*. In C. McCann and R. Pigeau (Eds.) *The Human in Command*. New York: Plenum Press, pp. 163-184.

more than once over the next 150 years. Morton (2003) observes that, after the mass advances of the Battle of the Somme in 1916, Canadian commanders realised that the threat posed by modern weapons and the impasse of trench warfare required a change of tactics. Consequently, the Canadian Division that fought at Vimy Ridge in 1917 developed the technique of breaking the infantry into small teams with their own objectives. This technique, Morton argues, required good leaders and necessitated junior and non-commissioned officers becoming “minor tacticians” (p139). This process of loosening formation was still on-going during the Vietnam War. Wyly¹⁴ points out that at the lowest tactical levels the US Marine Corps adopted a very loose structure. “We didn’t fight in the formations we had learned at Camp Lejeune and Quantico because at the squad and platoon levels, definable targets such as a formation of men got shot to pieces. Our seniors didn’t know it but we just quit doing it – quit using the structure”.

For the Prussians, and after unification, the Germans, the debate saw a broad division between two camps. On the one hand, there were those who believed that coordination should be achieved by commanders directing infantry units trained in a range of detailed tactical procedures for manoeuvre and engagement. On the other, there were those who believed that tactical decisions should be devolved to junior leaders. The latter argument won out with the 1888 German field service regulations stressing that unit commanders had choice of form and means within their areas of responsibility. Independence of thought and action within higher intent were encouraged and a bias for action over undue deliberation was emphasised. This debate continued and, as Bungay points out, the name *auftragstaktik* (German *auftrag* = task or mission) was coined, in the early 1890s, as a derogatory term by those who still favoured a more centralised approach to command and control.

The extent to which technological change caused or merely intensified the move to decentralised command is an interesting question. Social change must also have played a part. Here we should question what it was that enabled freedom of action in Napoleon’s armies as opposed to those of the King? Bungay does not appear to be of the view that technological change was causal “...the central issue under debate was how to retain control while encouraging independent action. Technology was making the issue more acute.”

The development of mission-oriented, decentralised, approaches such as *auftragstaktik* and ‘mission command’ was a direct response to the inability of communications and information technology to match the rapid advances in other areas of warfighting. This class of approach is based upon the idea that subordinate personnel should be provided with the commander’s intent in terms of task aims and should be left to use their initiative and expertise to plan and execute the mission. Such approaches provide the added advantage that

¹⁴ Wyly, M. D. (1991). Thinking like marines.
http://www.belisarius.com/modern_businessstrategy/wyly/thinking_like_marines.htm.

subordinates are free, within commander's intent, to replan as the situation changes or exploit opportunities, as they present themselves, without reference to higher command levels.

There is a danger of assuming that the development of the auftragstaktik represents a moment of enlightenment based upon a desire to harness the full potential of the military organisation by empowering those at subordinate levels of command with a view to exploiting their creativity. This may well be an anachronistic retro-fitting of a form of modern human resources view to an age where a structural approach to management was the zeitgeist¹⁵. Rather, as Widder (2002) points out, '...advances in armaments had outstripped advances in tactical and doctrinal development. To reimpose some form of command and control, it now became important to develop a new concept that, on one hand, would enable some independence of action while, on the other, would preclude misguided action by lower-level leaders'. According to this interpretation at least, Auftragstaktik represented a compromise that was necessary to achieve some degree of control in a time of technological advance when it was becoming necessary to tolerate independence of action. As noted above, the term was originally derogatory.

The advantages of mission-oriented approaches come at a cost and as such, I would argue that choice of command approach is, in part, an economic choice. For example, decentralised command requires extensive education and training of junior personnel. Their levels of knowledge of tactics, techniques and procedures within their specialist domains need to be high. They need the ability to diagnose situations, and to formulate, implement, and monitor the plans they devise for dealing with those situations within commander's intent. Military organisations that espouse decentralisation tend to expect their personnel to be able to think 'one or two levels up'. Moreover, this capacity, combined with an appreciation of command intent, necessarily means that commanders should have the ability to appreciate the aims of flanking formations and consequently be able to achieve synchronisation. Thus, selection and promotion systems need to be efficient in placing personnel with the appropriate aptitudes. In economic terms, the costs associated with such requirements are offset with organisational and operational advantages. For example, at least in theory, smaller staff organisations are required in superordinate headquarters owing to the decentralisation of planning and oversight. Moreover, operational advantage is accrued in terms of speed of reaction to rapidly changing scenarios. Indeed, since decentralisation of initiative must introduce some degree of performance

¹⁵ Fineman and Mangham point out that the structural approach to management, characterised by the works of Spencer (1873) and Taylor (1911), assumes, amongst other things, that 'supervision must be achieved through a clear chain of command and through the application of impersonal rules' and that 'only those at the top have the capacity and opportunity to direct the enterprise'. The human resources approach, which developed in the 1950s and 60s emphasises a symbiotic relationship between individuals and organizations where 'democratic leadership is the most effective means of managing' and 'openness and participation are the most effective means of demonstrating democratic leadership'.(p319). Fineman, S., & Mangham, I. (1987). Change in organisations. In P. Warr. *Psychology at work*. London: Penguin.

risk, organisations believe that the degree of operational advantage accrued outweighs the risk.

To examine this point further, forces need to consider whether they should seek to maximise gains or minimise losses. (Indeed these may not be simply related). A focus on maximizing gains is entirely consistent with decentralisation. Alberts and Hayes' description of 'self-synchronization' (decentralisation carried to its logical extreme within a net-enabled environment) appears focused on maximizing gains where it emphasises that such operations will be "more effective (greater likelihood of mission accomplishment) and efficient (few forces able to do more)"¹⁶. For example, it might be expected that because tactical decisions are being made by junior officers and NCOs as opposed to general officers with many year's experience, more tactical errors would be committed. The risk of such failures is acceptable provided that they are localized and have limited knock on effects within the blue force system (loose coupling). Moreover, any such failures are acceptable to the extent that they do not undermine the achievement of operational and strategic objectives. For example, in a particular campaign 5% failure might be deemed acceptable. In a war of national survival 49% failure might be acceptable. Clearly risk is very much a function of the strategic and operational situations. It is argued here that the appropriateness, or otherwise, of command style is not an absolute but rather is dependent on context. The same balance of risk may not be acceptable in a sensitive peacekeeping environment. There, a 99% level of confidence might be most appropriate. British Doctrine is in line with these points:

'Mission command allows' the commander 'the latitude, as well as the means, to select and execute the most appropriate course of action necessary to achieve his objectives. However, reality dictates that the degree of freedom afforded will depend on the nature of the conflict' (JWP 3-00 p1-3). Thus there is choice in how command and control can be exercised and in an earlier paper, I presented an examination of the potential advantages of being able to move between 'control modes'¹⁷. The basic ideas are summarised in the section that follows.

Command Elasticity

Choice of command approach should, in part, be driven by the operational and strategic context with a view to achieving an appropriate balance of risk. Thus, command approach is part of a class of control levers that commanders can manipulate with a view to optimizing effectiveness in the light of operational circumstances and as those circumstances change. Stewart, examined the issues associated with short term adaptation of command approach, for example from a decentralised to a centralised approach. A theoretical discussion was presented that was grounded in the framework for control and command proposed by Pigeau and McCann, specifically their development of the notion of command intent. Two simple ideas were introduced. First, that military

¹⁶ Alberts, D. & Hayes, R. E. (2003). *Power to the edge*. Washington DC: CCRP Publications series.

¹⁷ Stewart (2006).

organisations have a point of 'command and control equilibrium', based on the extent to which they are optimised for centralised or decentralised operation. Second that the ability to move away from that point of equilibrium differs substantially between organisations and can be characterised as 'elasticity'.

Military organisations that have the capability to employ mission command have the capacity to centralise if necessary. Stewart examined a number of theoretical scenarios drawing upon the concept of intent to illustrate the adaptation of command approach. According to Pigeau and McCann, Common Intent has a causal relationship with performance. Therefore, we can propose that should Common Intent fall below a theoretical threshold level, the risk of inappropriate performance would be seen as unacceptable. Pigeau and McCann define Common Intent as Explicit Intent plus *operationally relevant* Implicit Intent (emphasis added). Thus, at any time there is likely to be a residual store of Potential Implicit Intent. A decentralized organisation can adapt rapidly to its circumstances in the short term either by drawing on reserves of Implicit Intent or by harnessing technology to increase Explicit Intent through reachback. This capability is indicative of the organisation's 'elasticity'. Compared to the decentralised organisation, a centralised force has much smaller reserves of Potential Implicit Intent and consequently, even the full reserve is insufficient to pull the organisation above the risk threshold if Explicit Intent is lost. Until Explicit Intent can be re-established, the force is at risk of inappropriate and / or uncoordinated action. Even for decentralized organisations, elasticity is time-limited. Organisations should seek to return to their point of equilibrium to avoid performance deterioration.

It is important to consider why one organisation might have low Potential Implicit Intent when compared to another. A key issue is the extent to which the organisation's command 'culture' promotes or hampers the development of Implicit Intent. Cultural enablers are embedded in the three factors underpinning choice of command approach that have been described by Pigeau and McCann. These are: shared knowledge, comparable reasoning ability, and shared commitment and motivation. The degree to which these are developed directly underpins the reserves of implicit intent an organisation has available when it operates. They heavily influence and / or restrict the choice of the point of command equilibrium for any military organisation. Moreover, these factors are the primary determinants of Potential Implicit Intent and therefore underpin the degree of elasticity that the organisation has.

Choice of command approach (point of command equilibrium) is not merely a decision about process, but concerns all organisational lines of development and therefore is, in part, a balance of investment question. Creating an organisation that has a decentralised equilibrium is expensive and time consuming. An efficient system of training and education is essential to build shared knowledge, to reinforce appropriate behaviour and values, and to ensure that personnel are appointed to positions that suit their talents. Economically, it is relatively cheap to operate at the centralised end of the continuum. Such an organisation will structure itself in such a way that decision making can be centralised, for

example by creating a large central staff organisation devoted to planning. In addition, organisation processes will support such centralisation, in particular by constraining and limiting the decision making freedom afforded to subordinates. However, perhaps most important is the personnel line of development. Stewart proposed that Pigeau and McCann's three factors are all part of this line of development. Moreover, without denying the challenges associated with altering organisation structure, drafting new doctrine, or introducing new technology, it is the personnel line of development that is the most difficult to change.

It is not appropriate to impose command doctrine top-down without ensuring that it will be appropriate to the culture and capability of the organisation concerned. In this vein, a long term shift in a military organisation's point of command equilibrium toward decentralisation is enabled by a circular process built on an appropriate organisational culture. In the first place, a culture that allows the exercise of initiative must exist. This permissive culture is reinforced by the organisation being seen to reward appropriate behaviour and, most importantly, being seen not to punish the mistakes that are an inevitable consequence of personnel exercising new found authority and responsibility. Gradually, reserves of implicit intent are built up and, because of this; the organisation becomes capable at its new point of C2 equilibrium.

In order to be able to operate effectively in an adaptive fashion, military organisations must develop criteria for which circumstances make it reasonable to alter command approach. Moreover, they must develop procedures for managing this change. In so doing, they have the potential to eradicate inappropriate command styles, such as micromanagement through the 'long-handled screwdriver', by defining, and bounding, when and how centralisation should occur and when and how it should stop. For decentralised organisations, there is the opportunity to protect and reassert the predominance of tried and tested approaches such as mission command from any creeping tendency to centralisation.

The question of whether or not new technology, amongst other things, will render decentralised command approaches such as mission command redundant, owing to the theoretical possibility of a centralisation of directive authority, is very important. Forces that have their point of equilibrium in the centralised region cannot be expected to step up to decentralised command and remain efficient: but they are relatively cheap, and quick, to train. Therefore, even in an age when centralised command is theoretically possible owing to technological advance, forces with the capability for decentralisation will retain the advantage. There is no good reason to undermine mission command. It should be remembered that forces with the capability for decentralised command cannot be created quickly on demand – *no matter how much technology is available*. Decentralised command is built on intangible qualities of the force such as trust, expertise, and broad experience, all of which take time to develop and are fragile, thus requiring careful maintenance. It is essential to realise that mission command is, as was ever the case, entirely dependent on the capability and culture shared by the

individuals making up the military organisation. In this regard, technology is simply one enabler.

There is a substantial cultural aspect to decentralisation. I would argue that command approach is based on a variety of attitudes and beliefs shared between organisational members and inculcated in new members. For example, in order for personnel to take initiative, they must be confident that they will be supported by their superior officers and will not be punished for making honest mistakes. In its purest form, decentralisation should support 'benign non-compliance' where individuals stretch their direct orders in the belief that they are following a path that is most aligned with overall intent.

Differences in Command Style

Despite the constraints described being relatively universal, decentralised command approaches are not universally adopted within the world's militaries. Some organisations still adopt command by direct and detailed orders. There are a number of reasons for this. Some systems are too 'tightly coupled' and / or resource limited to allow for any degree of flexibility for individual initiative within the plan. A good example of this is the air tasking order (central planning decentralised execution). Military organisations in totalitarian regimes, tend not to favour decentralisation, in part owing to a generalised reluctance to delegate authority, but most prominently because of the size and standard of the armed forces concerned. For example, the former Soviet bloc maintained large standing forces based around conscription. The limited training and experience of personnel in such forces means that it is unreasonable to expect to be able to delegate authority owing to a lack of competence in more than a highly prescribed set of skills and procedures. Military operations for such organisations tend to involve the orchestration by the centre of a number of practiced tactical manoeuvres.

Even between the closest of partners and traditional allies, there has been the suggestion that differences in command style have led to a degree of friction. Stewart¹⁸ reviewed this topic based on historical sources and an analysis of the few scientifically oriented studies that have been carried out on the topic of command intent. A high profile example of this difference in command philosophy resulting in friction is provided by US Gen Wesley Clark¹⁹ who believes that it was a major contributing factor to his well-publicised disagreement with KFOR Commander (UK) Lt Gen Sir Mike Jackson during the Kosovo campaign. Clark reflected that "In the British system...a field commander is given mission-type orders, not detailed and continuing guidance...the American military has always aspired to this model, but has seldom seemed to attain it." The studies reviewed by Stewart, were argued to provide some support for Alberts and Hayes'²⁰ observation that US and UK armed forces tend to adopt 'problem solving' and

¹⁸ Stewart (2009).

¹⁹ Clark, W. K. (2002). *Waging modern war*. PublicAffairs Ltd.

²⁰ Alberts and Hayes (1995).

'problem bounding' approaches to command respectively. A sample of US Army operations orders was judged by Klein²¹ to contain relatively low levels of information associated with high level goals and - in his view - an inappropriately high proportion of plan-related detail. By contrast, respondents to British and Australian surveys rated high-level goals to be an important component of commander's intent but rated details of the plan to be of relatively low importance in that section of the orders document. Further work by Shattuck²² implies that, in an exercise, subordinate commanders were not deemed to have prepared an appropriate solution to a military problem unless it matched closely that prepared by their immediate superior. This also supports the view that in the US Army's approach to command, commander's intent is a route to a particular solution rather than an indication of boundary conditions within which subordinates are expected to work.

There is no suggestion here that one or other of the centralised or decentralised approaches to command are superior. These command cultures have evolved to suit the organisations concerned in terms of their personnel and the operations they have conducted or trained for. As is discussed in Stewart (2006) it is easy to overlook the considerable investment in time and resources associated with establishing and maintaining an organisational culture of mission command and training personnel at the high standards required to operate within such a paradigm. In terms of the command framework devised by Pigeau and McCann, command approach is regarded as part of control, which they define as "structures and processes devised by command to enable it and to manage risk". Control is subordinate to command; therefore, where choice is available, deciding how command is to be exercised is a function of command. The way command is exercised must take into account those under command. In an era where understanding the culture of adversaries and neutral populations is, quite rightly, heavily emphasised, we should not forget the importance of understanding the organisational cultures of alliance and coalition partners.

Concluding remarks

This paper has provided a discussion of the evolution of command approach from a human-centric perspective. It has discussed where we have been by indicating how command has been influenced across all lines of capability development. For example, technological development has enabled rapid sharing of information and intent and has, in some instances, led commentators to call into question the continuing relevance of decentralised command. Likewise, organisational developments, for example the loosening of formation within Napoleon's armies or more recently the pressure for militaries to work in multinational coalitions containing transnational governmental and non governmental organisations, have imposed friction and required military commanders to continually reconsider how to realise their superiors' intentions.

²¹ Klein, G. (1993). *Characteristics of commander's intent statements*. Paper presented at the Symposium on command and control research. Washington DC.

²² Shattuck, L. G. (2000, Mar-Apr). *Communicating intent and imparting presence*. *Military Review*.

The challenge presented within the title of this conference was to consider the question of where command is going in the future. This is of course dependent upon the challenges that command, control, and commanders themselves are put under in the future. We have already begun to see how the contemporary operating environment has placed novel pressures on junior and senior commanders alike at the tactical, theatre, and even strategic levels. Krulak's notion of the strategic corporal has played out in campaigns across the world since the end of the cold war. In an earlier paper, I presented a theoretical account, summarised above, of how, in terms of levels of command intent, command approach might be systematically altered to meet the demands of the situation with a view to balancing risk and opportunity. That analysis focused on the challenges of operating across a continuum of operations and it is perhaps the recognition of this continuum that presents the most substantial challenge to command in the future, not least the need to mesh the traditional military role of combat operations with a non-kinetic line of operations.

Despite the recent pressure that has been put on prescriptive notions of 'effects based operations', it is still the case that future operations will require a clear focus on the achievement of specific effects and decisive conditions. Within this requirement, the need for theatre level commanders to consider the aggregation of the effects of different lines of operation will result, inevitably, in some degree of centralisation to ensure that a consistent 'message' is delivered to key target audiences. At the very least this will necessitate tighter supervision of tactical progress. The logical extension of supervision to centralised direction seems unworkable, except in exceptional circumstances. The way in which this debate plays out in the next few years will be one of the key contributors to the cultural development of the armed forces of the western world in the future and will doubtless be a topic of debate at future symposia of this kind.