

New Problems, Old Theories, New Thinking: Achieving the Intellectual Edge in the new character of conflict

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“Setting oneself on a predetermined course in unknown waters, [which] is the perfect way to sail straight into an iceberg.” (Mintzberg, 1978)

Introduction

On the 17th February 2015 CGS the professional head of the British Army, spoke at Chatham House of how the British Army needed to re-think warfare.¹ He outlined his view that warfare was now one in which the Army would operate in, “a franchise of ideas...where war is about minds not stuff.” The statement was reflective of a change in character of conflict one which is not peculiar to the UK military, and have been echoed by others since. Furthermore, many of the symptoms of the changes are being felt across society, from the commercial sector² to diplomacy³. Lord Robertson of Port Ellen and previous Secretary General of NATO during the Kosovo Campaign recently captured the wide-ranging nature clearly as follows:

“We are experiencing a step change where complex human systems now operate within other complex systems, often with modes of thinking and practices developed in simpler times.” (Robertson, 2016)⁴

Implicit within the statement from CGS was a need for armies to understand that future conflicts will be won by those who successfully convince the widest population of the legitimacy of their cause, and this requires novel approaches. It is not an easy task however it is clear from new doctrine, structures, equipment, and infrastructure that has been introduced by many armies that much is now in train to address the changes.

¹ Chatham House 17 Feb 15, “The Future of the British Army: How the Army Must Change to Serve Britain in a Volatile World”, <https://www.chathamhouse.org/event/future-british-army-how-army-must-change-serve-britain-volatile-world#sthash.s2sePWbb.dpuf> [accessed January 21, 2016].

² Wooldridge, A., (2015), *The Great Disruption*, London: Profile.

³ Fletcher, T., (2017), *The Naked Diplomat*, London: Harper Collins.

⁴ Lord Robertson, speech to Defence Academy ICSC 12B dated 2 Feb 16.

The need to focus on the 'mind' should however not be mistakenly interpreted as solely being focussed on that of, actors, audiences, adversaries, and enemies. To create 'a franchise of ideas' also indicates there is a need to ensure the 'mind' of the Army, or any army for that matter, is sufficiently capable of meeting the requirement. Furthermore, the change in the character of conflict should not be evaluated as one which requires completely new approaches to everything an army does; there is much from the past that could and should endure.

It is therefore these two facets that underpin the content and findings of this paper; how to train the 'mind' to fight in the new character of conflict, and the applicability of existing, theory, research, and practices in achieving the solutions. This approach that is adopted is one of applying a broad systems approach to training (SAT), using evidence, theory, and research, to explain the deductions within each stage the process. The steps taken in the paper include initially considering what constitutes the new character of conflict; identifying the *relevant operational requirement* (or operational performance standard (OPS)). It then assesses the training gap a specific, measured specifically and narrowly against the complexity and networked enabled new character of conflict. This limited focus is because to assess all characteristics would be too expansive in this short paper and because the impact of complexity and networks has been significant. Finally, the paper will offer some relatively low cost appropriate training interventions required to close the training gap (the training delivery).

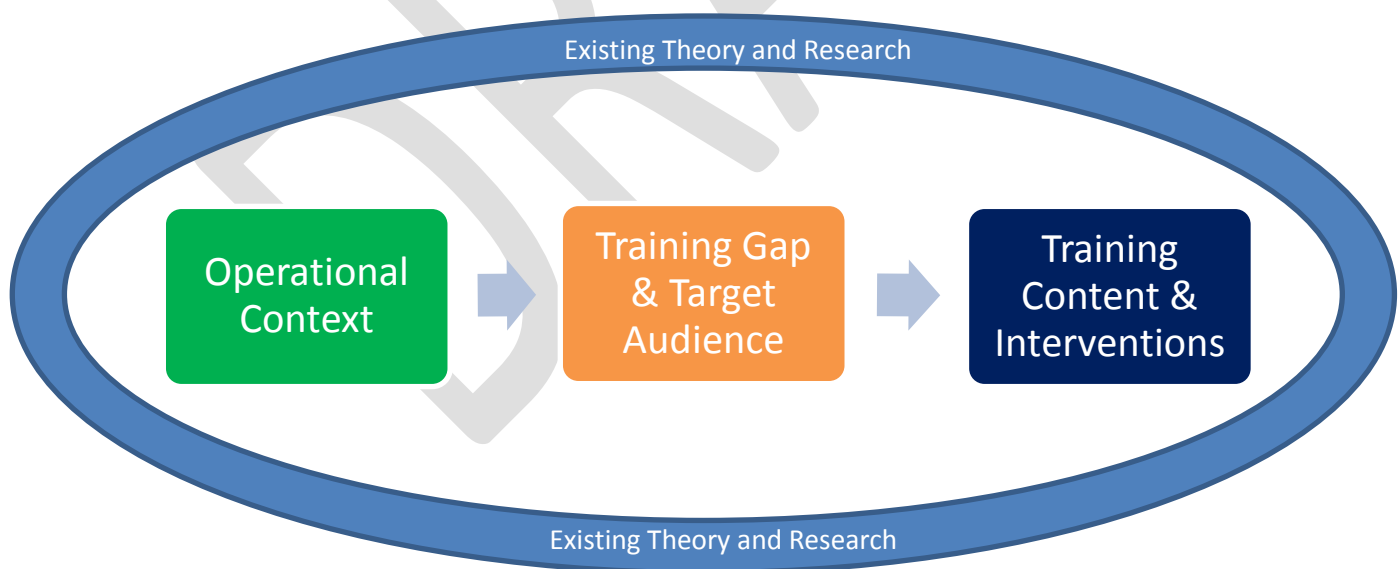


Fig 1 – The Approach taken by the Paper.

The paper fully accepts that for most armies there is intent to return to contingency operations and therefore an ability to conduct conventional and non-conventional operations, singularly or

concurrently. The recommendations in this paper are therefore aimed at both environments. However, the evidential backdrop used in the paper is that of non-conventional operations because it is in this area that the changes in character of conflict have been so manifestly apparent. Furthermore, whilst Western armies may have geographically disengaged with recent operations in Iraq and Afghanistan, adversaries have not disengaged:

'The Crusade fights us in our home. Should we not fight in its home? Every country that has taken aggression against Iraq is a legitimate target. Our right to respond does not subside because time passes.' (Abu Hamzah al-Muhajir (2008)).⁵

The Operational Context

Surprise. It has become reasonably common to relate the change in the military environment indicated by CGS with the US led coalition invasion of Iraq in 2003. It is questionable whether all the protagonists would accept this prognosis, however for ease of reference it is the one the paper will use.⁶ In hindsight it was probably also a time when coalition forces could have been accused of suffering from the 'Wykehamist Fallacy':⁷

"Intelligence failures very often come not because you can't see what's happening," he smiled, "but because you misinterpret the intentions. You read their intentions as if they'd been educated at Winchester..."⁸

What is not in doubt is that it was a new operational environment and one that surprised many: *"Here we are, we're really good at fighting, and we are losing."*⁹ Surprise, which it is argued resulted from an organisational mindset in most armies that was unprepared by the character and severity of the complexity that it faced. Paraphrasing the quote from Lord Robertson's, the *degree and character of previously unseen complexity* was simply unexpected. It is a supposition subsequently supported by experienced and credible officers in the US and British Army; notably US General Stanley McChrystal and Brigadier Ben Barry of the British Army.^{10 11}

⁵ Fishman, B.H., (2016), *The Master Plan; ISIS, Al-Qaeda, and the Jihadi Strategy for Final Victory*, Yale: New Haven, p129.

⁶ Fishman, B.H., (2016).

⁷ Wykehamists are pupils and ex-pupils of Winchester College in England, named after a previous head master, and the Fallacy is based on a view that others will play by the same set of rules and ethics as held by those of the school however the reality is that this is a naïve and dangerous position to hold.

⁸ The Guardian on-line: *In this age of terror the Cold War seems so much more comforting*, <https://www.theguardian.com/commentisfree/cifamerica/2010/jul/02/morse-code-more-comforting-than-martyrdom> [accessed 29 Mar 17].

⁹ McChrystal, S., (2015), *Team of Teams: New Rules of Engagement for a Complex World*, New York: Tantor Collins.

¹⁰ S. McChrystal, *Team of Teams*.

¹¹ Barry, B., (2017), *Harsh Lessons: Iraq, Afghanistan and the changing Character of War*, Abingdon: Routledge.

Fortunately, the surprise felt in 2003 is now far from the case; terms such as ‘the country must expect the unexpected’, and ‘we are increasingly likely to have to deal with unexpected threats’, are now commonly used.¹² Moreover, in the military space new doctrine, structures, and equipment have been introduced, and many of the lessons from operations in Iraq and Afghanistan, have been accepted. The reality being that most armies now recognise the second part of the Wykehamist Fallacy was probably more accurate and perhaps it was a foretaste for the character of conflict for the foreseeable future:

“...a bunch of thugs. And actually their intentions aren't our sort of intentions, and they may not be bluffing – they may be out to do something catastrophically dangerous.”¹³

It can therefore be seen that armies were surprised in 2003 and for some time after but most have now recognised the difference in operational context and importantly the need to do something about it. A substantial part of ‘doing something about it’ is that of identifying the training gap between the practices of armies in 2003 (and for some years after) and that needed today. To start this process requires an understanding of what constitutes the new operational environment and it is to this which the paper now turns. Noting as stated at the beginning of the paper that the factors considered below are specifically focussed on the changes that are relevant to the focus of the paper, that of the ‘mind’ of an army.

Complexity and Networked Capability. Firstly, it needs to be recognised that the degree of complexity, as indicated by Lord Robertson et al, cannot be pinned to a single new capability, issue, or tactic. The reality is that a *combination* of wide ranging new effects on the battlefield, and more widely, has created the disruption. To use an age-old comment, greater than the sum of the individual parts. Some of the effects have been achieved as consequence of others, some are not new, and some are genuinely innovative and novel. Furthermore, the combination of issues has allowed adversaries to gain a new level of agility and potency, enabled by inexpensive ubiquitous networked secure technology. They are realising benefits through the exploitation of a strong empowered, albeit twisted belief system, and widespread availability of low-cost high-impact weaponry.

Simultaneity, and the exploitation and scaling up of influence through information operations, decision making at speed, and the conducting of low cost high impact actions, are all characteristics of the new environment. It is a complex digitised operational environment unlike any seen before.¹⁴ The term ‘battle-field’ is itself now a misnomer with the geographic battle-field, often defined by the

¹² NSS 2015.

¹³ The Guardian, Ibid.

¹⁴ Atwan, A. B., (2015), *Islamic State: The Digital Caliphate*, London: Saqi.

borders of a nation state being joined with adversaries by one defined by belief. The world is now the operational arena, the mind and conscious vital ground, and cyber space is a new and important dimension.

This environment is maximised by an enemy that does not follow the same rules and tactics as conventional armies. It successfully exploits the opportunities of networked C3 through the use of mutating coalitions, directive but empowered command and control (C2), and hybrid organisational structures. Where a top-level hierarchy, with little or no 'middle' structure, empowers a cell based network (see hybrid and networked structures in fig ***).

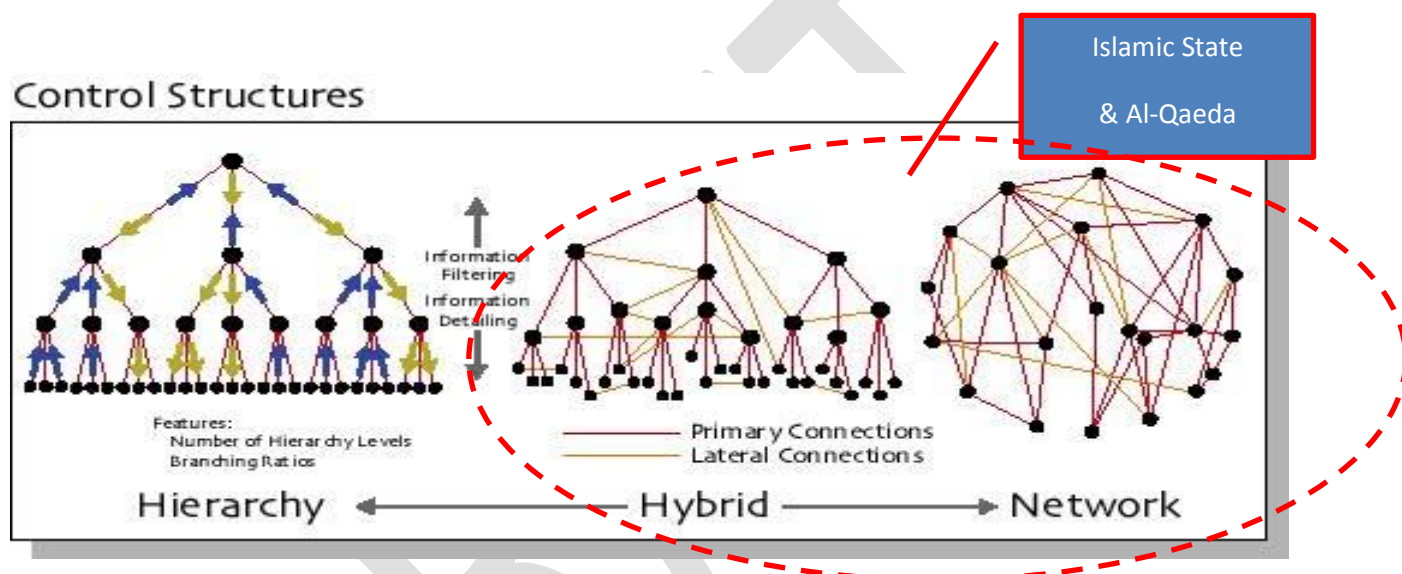


Fig 2 – Representative Islamic State and Al-Qaeda Combined Hybrid and Networked Structures.

Consequently, at the strategic level it could be argued, the leaders of insurgency groups are now practicing operational art and employing military science to achieve levels of effect previously the domain of well-trained and educated professional soldiers. Operational Art,¹⁵ a Manoeuvrist Approach,¹⁶ and Information Manoeuvre¹⁷ may not be planned by adversaries or be as pure as doctrinally anticipated in the West, but they are being achieved.

The influence on the profile and attitude of Spain's political leaders of a single, albeit horrific, train bombing is a stunning example of achieving strategic effect from a tactical action.

¹⁵ The orchestration of a series of actions to achieve a desired operational effect.

¹⁶ The manoeuvrist approach is based on manoeuvre theory, which is a way of thinking about warfare rather than a particular set of tactics or techniques, and its essence is defeating the enemy's will to fight rather than his ability to fight. LWD 1 The Fundamentals of Land Warfare

www.defence.org.cn/aspnet/vip-usa/uploadfiles/2008-05/chapter4.pdf [accessed 10 Mar 17].

¹⁷ "Their media initiatives are often constructed so that journalists will cover the content and amplify the Islamic State message." In, Fishman, p227.

(McChrystal, 2015).^{18 19} Whilst, the recruitment of 25,000 foreign 'jihadi' for operations in Iraq and Syria in a single year, through inexpensive but well-constructed and targeted use of the internet is an outcome most conventional armies would envy.^{20 21}

Adversaries, since 2003 are now able to get inside the previously effective Observe Orient Decide Action (OODA) loop of conventional military forces to a far greater extent than in the past.²²

'Insurgents used the internet and satellite television to get their message across, making the 'propaganda of the deed' an integral part of their narrative. Coalition information operations were more constrained and much slower, so the advantage usually lay with the insurgents.'²³

To paraphrase the words of the soldier and historian Liddel-Hart, adversaries now routinely achieve surprise and disrupt the equilibrium of the Army.²⁴ Or more contemporarily in the words of US Lt Gen Wallace, Commander of US V Corps in 2003: "The enemy we are fighting is different to the one we war-gamed against."²⁵

Complexity Caveat. In identifying the new operational environment there is a key need to also identify the characteristics that are not new. This is because they can be seductively attractive when designing training solutions, because they are already within the comfort zone, and can lead to more of the same if not recognised early in the process.

In the case of evaluating the training gap that arose after 2003 it would be easy, and is often, as characterised by *the shift to insurgency operations* in 2003, or that of *complexity alone*, and/or that of *war amongst the people*. The reality however is that insurgency operations, complexity, and warfare amongst people have been around for some years and many armies are experienced in these areas.²⁶

- For instance, the British Army, has operated in high and low intensity environments, sometimes concurrently, on several occasions since at least the Second World War.²⁷ Malaya, Northern Ireland, Korea, Falkland Islands, Aden, all represent British Army

¹⁸ S., McChrystal, *Be Adaptable*, Inc Magazine interview, <https://www.youtube.com/watch?v=GW0zxuRgiB8&nohtml5=False> [accessed 30 March 2016].

¹⁹ In Jul 16 ISIS conducted a series of suicide bombings in Bangladesh resulting in a number of international clothing manufacturers considering withdrawing their factories from the country.

²⁰ At the same time adversaries have quickly learnt from their errors; unsophisticated Taliban and Al-Qaeda propaganda has been replaced by high grade seductive Da'esh multi-media channels.²⁰

²¹ <http://www.globalresearch.ca/the-west-recruits-terrorists-25000-isis-fighters-from-foreign-countries-since-mid-2014-un-report/5440512>.

²² Boyd OODA Loop.

²³ Barry, B., p141.

²⁴ R.H., Larson, B.H. *Lidell-Hart: Apostle of Limited War*, Military Affairs 44, no.2 (1980).

²⁵ Dale, C., (2011), *Operation Iraqi Freedom: Strategies, Approaches, Results, and Issues for Congress*, Pennsylvania: Diane, p42.

²⁶ Not to confuse experienced with capable and successful.

²⁷ Lord Robertson, Michael Clarke, UK Defence Academy presentations 2 and 5 Feb 2016 respectively.

operations along the spectrum of conflict. Therefore, experience of insurgency alone is not a 'gap.'

- Furthermore, complicated and unpredictable operations, also often cited as characteristics of the new character of conflict, have been a constant in warfare for many years.^{28 29} In UK operations, Brigadier (retired) Ian Gardiner a Royal Marine Company Commander during the Falklands Campaign, would offer that in the heat of battle an officer may be in command but rarely in control; a reasonably unpredictable and complicated situation.³⁰ Furthermore, most armies can cite similar situations, therefore, experience of unpredictable complicated environments is not a capability gap.
- Finally, the concept of 'war amongst the people' reflective of recent insurgency operations, has actually been part of the nature of warfare since the 'hundred years' war', if not before. Indeed, Europe suffered twenty-seven regional or internal conflicts during the period 1917-23 at a cost of over four million lives; a greater number than the combined loss of British, French, and German troops during the First World War.³¹ Therefore, operating in environments where combatants are difficult to distinguish and can change from one role to another whilst 'normal' life continues, is not new.

It is therefore contended that the relevant characteristics of the new operational environment is that of complexity and unpredictability, and empowered networked warfare. It is therefore against this that any training gap analysis should be considered.

The Training Gap and the Target Audience

Fortunately, for the specific area of focus for this paper, that of the 'mind', the training gap has already been recognised and articulated in doctrine. It is one of need to develop and practice new cognitive capabilities.³² UK ADP Land Ops (2016) suggests 'firstly, land forces require the command and cognitive skills to be flexible and adaptable' whilst Joint doctrine includes a chapter on the new thinking required in decision making in complex environments.³³ Whilst in the US Army TRADOC identified innovative leaders with advanced cognitive capabilities being needed to ensure commanders can think ahead in time and space to retain and exploit the initiative. What is more,

²⁸ McChrystal, CGS et al.

²⁹ Low intensity operations have often required the Army to deal with adversaries who have used, tactics, structures, and approaches that differ from those used by the Army. Moreover, these adversaries have often operated command control models which empower individuals and/or local groups, operating in a number of guises, making them difficult to find and fix (Evans, 2016). These adversaries have also often viewed time in terms of achieving a desired outcome, not a military synchronisation matrix aligned to a pre-planned political 'completion of operations' timeline.

³⁰ Brig (ret'd), I. Gardiner, various presentations to Def Ac 2015-17.

³¹ Gewrath, R., (2016) *The Vanquished: Why the First World War Failed to End, 1917-23*, London: Penguin, pp1-15.

³² ADP Ops (2016), Unified Action, Understanding and Decision Making doctrine.

³³ JDP04, *Understanding and Decision Making*, Ch2.

US Human Dimension Doctrine 2015 Line of Effort no.1 seeks to achieve 'Cognitive Dominance' through training, education, and experience.³⁴

Moreover, this recognition of the training gap is an important step on surviving and becoming successful in a complex world, regardless of the organisation. Research by Professor Rita McGrath, of Columbia Business School, a globally recognised expert on strategy and uncertainty in volatile environments, bears this out. She suggests organisations in complex environments who challenged their existing practices generally survived and eventually flourished by turning recognition into action and adopting new and novel approaches.³⁵ She further identified failing organisations as those who never evaluated their existing business models and used "nostalgia as business strategy."

Additionally, the evidence that supports the doctrinal need for new cognitive practices is supported by comprehensive and compelling evidence, which tellingly is also suggestive of a continued difficulty in embracing the required changes. For instance, in his Brigadier Ben Barry's 2017 book on the harsh lessons learnt from Iraq and Afghanistan he suggests that whilst technology can enable the adaptation to complex warfare the key enablers *and barriers* are *leadership*, culture, *and mental and organisational agility*.³⁶ Whilst Professor Karen Carr of Cranfield University when observing the 7 Questions estimate at CAST in 2014 concluded deference to rank remains an influence and "...the deliberate framework can sometimes work as an anchor making staff focus too much on deliberate analysis."³⁷ In 2015 US Army Lt Col JP Clark conducted research into the US Army transition programme and found:

"The dynamic in such organisations favors [sic] incremental change within the existing paradigm, because that paradigm is the common reference point for all, even though as individuals we might challenge parts of the larger narrative. Even the fiercest critics and iconoclasts often begin from the same starting point of the recent war when engaged in an institution-wide dialogue. The shared recollection of the war is the lingua franca of the profession. Or, put differently, that memory is our communal intellectual tether, limiting how far the generation can stray in whatever direction it decides to go."

He also uncovered a pervasive desire to remain in that which is comfortable and recognisable, arguing it arises from an unwillingness to embrace new thinking in an environment that is continually drawn to old methods and ways. (Clark, 2016).³⁸

³⁴ USArmy, *The Army, Human Dimension Strategy* (2015), p8.

³⁵ Rita McGrath, *Fast Thinking: Reinventing Strategy for a Digitally Disrupted World*, <http://ebooks.capgemini-consulting.com/digital-transformation-review-7/files/assets/basic-html/page12.html>, 2015, accessed 22 January 2016.

³⁶ Barry, B., p150.

³⁷ Professor Karen Carr, Cranfield University, presentation to ICSC(L) 12B dated 6 Jan 16.

³⁸ J.P. Clarke, *Adapting to Strategic Change: Organizational Change and Adaptation in the US Army* (2016).

The Reasons Behind the Cognitive Capability Gap

It would be easy at this point to simply leave the discussion regarding what constitutes the training gap and move on to training interventions needed to close the gap. However, this would preclude the uncovering of some of the reasons why there is difficulty in embracing the changes now identified in doctrine and why there continues to be a desire to remain with the status quo. Importantly, by understanding these frictions it provides an indication of the training audience for any interventions, and interestingly leads to a view that the lack of embracement of change is wholly understandable.

The Conflict of Minds.

Notably, in the post-2003 complex operational environment two different thinking practices were occurring amongst the belligerents; one which embraced and exploited networking and the other which was hierarchical in nature. 2003 was also roughly the time the world saw a shift from analogue shaped and based business practices to that of digital systems, storage, and computation (see fig **); an important aspect of why surprise occurred in 2003 and beyond. As has been seen in previous sections, adversaries gained new levels of agility and benefits from a digitally enabled world, whilst conventional coalition armies struggled with the limitations of analogue and hierarchical systems. There were some areas of enlightenment such as JFSOG under the leadership of US General Stanley McChrystal, however it was generally the insurgents of al-Qaeda and ISIS/L and eventually Islamic State who achieved greater advantage from the capabilities.³⁹ This section therefore concentrates on two specific 'mind' related issues that led to this situation; demographics and organisational culture.

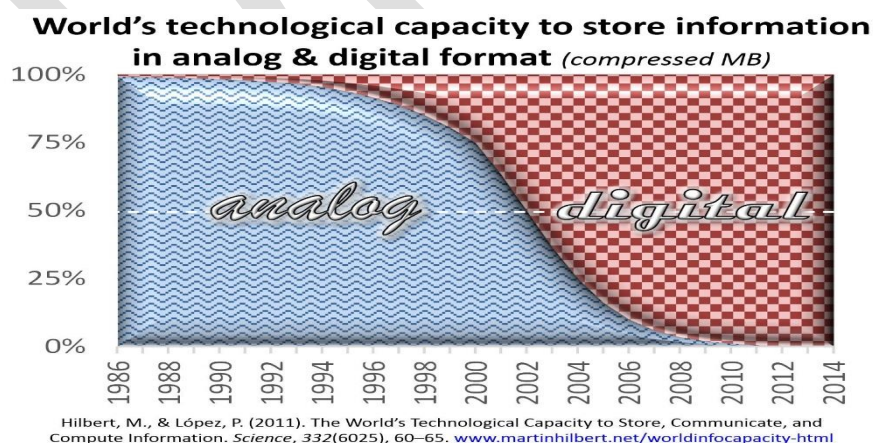


Fig 3 – Illustration of Chronological Switch from Analogue to Digital Practices.

³⁹ McChrystal increased the monthly raids from 10 to over 300 in a 3 year period through the adoption of a networked shared awareness approach, see *Team of Teams*.

Demographics.

- **Insurgents.** The average age of Al-Qaeda or IS is assessed as being approximately twenty-six.⁴⁰ This, according to a 2012 study by the PwC subsidiary Strategy@, makes them the Arab Digital Generation; those born between 1977-1997. Moreover, it means a 26 year old today has spent the majority of their life, and all of their adult life in a world that has been digital. They have been immersed in digital capabilities and practices, particularly the introduction of 3G and 4G technologies. They are a digitally shaped cohort that understands the capabilities, benefits, and opportunities of networking.⁴¹

Furthermore, Al Qaeda is purported to comprise 65~% of jihadis with a secondary level education, of whom ~25% are graduate level; a well-educated body.⁴² They are a cohort who had lived through huge regional turmoil including war and fundamentalism, 27% were unemployed, 54% were university graduates. In short, they were and are, engaged with their world, technically savvy, and they intuitively understand and are comfortable with networked technology and its opportunities.

There is a valid argument that senior leaders in the insurgency camp are, or were, of the analogue era; Osama Bin Laden or Abu Muhammad Al-Maqdisi were born in the 1950's. Therefore, their approach to C3 will have been shaped by analogue practices and thinking. However, this is offset by the deployment practices of insurgents which, as indicated in the first section of the paper, are based on of an intent fuelled flat networked approach. Therefore, the effect is power, and speed of action, shifts into the hands of those who deliver effect; people who are intuitively capable of operating in the new complex networked environment and for whom linear hierarchical systems are counter-intuitive.⁴³ In short, the insurgent cohort fell to the right side of the analogue-digital divide, chronologically and in terms of capability, thus they are not suffering from a cognitive capability gap.

- **Conventional Forces.** Using an analysis of the current demographics of the British Army as a reasonable reference point for most conventional forces it can be seen the cohort of leaders is somewhat different. Most if not all current senior commanders and planners in the British Army (OF4 (Lt Col) and above), were born during the period prior to 1980; a situation likely to be similar in most conventional armies.⁴⁴ This means that for most, their

⁴⁰ N., Rosenblatt, *All Jihad is Local: What ISIS Files Tell us about its Fighters*, <https://na-production.s3.amazonaws.com/documents/ISIS-Files.pdf> (2016), [accessed 10 Mar 17].

⁴¹ In 2000 there were ~460000 internet users in Egypt but by 2014 there were 46 million; a 20%pa growth from half of one percent to over fifty percent of the population in less than 15 years. By 2012, 83% of those aged 15-35 in 2012 accessed the internet on a daily basis.⁴¹

⁴² N., Rosenblatt (2016).

⁴³ Atwan, A.B., *Islamic State*.

⁴⁴ MOD UK Armed Forces Annual Personnel Report dated 1 Apr 14, tables 1 and 2. 11300 personnel were aged 40 and above, the officer cohort represented approx. 15% of total strength therefore 11300*0.15 would equate to ~1750 officers above age 40. 2403

formative years and much of their adult experience occurred prior to 2002. For the very youngest they joined the army at a time when digital techniques were only just becoming dominant.

For most senior officers, if not all, their formative years and initial Army experience was in an era where analogue technology and consequently analogue thinking influenced and shaped their views and experiences of how to command and control (including the author of this paper). An era, which prior to 2002, was dominated by hierarchical command, control, and communications systems (C3). Top-down C2, and hierarchically aligned C3, was the default practice and whilst mission command was a philosophy, decision making was still heavily influenced by hierarchy. Moreover, prior to Iraq in 2003 these approaches had been broadly successful; for the British Army the Falklands War, Gulf War 1, and to a degree in Northern Ireland were prosecuted using these methods, therefore their continued application is wholly understandable.

It is accepted that since 2002 the senior officer cohort of most armies will have subsequently lived and operated in a digital networked world, and learnt from the experience. However as shown in previous examples in the paper the default practices and thinking remains broadly aligned to the analogue environment. It will take approximately fifteen years from today before this cohort is no longer the dominant decision makers; even then those following will have been shaped by them.

As detailed earlier in the paper the hierarchical system and approach was surprised and struggled when faced with the complexity of networked warfare, as continues to be the case. Adversaries, more comfortable with networked empowerment, based on an understanding of intent, albeit within a directed set of religious and sometimes strategic principles, were more successful. When a similar approach was adopted by an army, or more specifically an individual commander (US General Stanley McChrystal), similar levels of success were achieved through '...restructure[d] and created networks of teams that operated within a framework and culture of empowerment to the lowest practicable level, not hierarchies.'⁴⁵

officers were ranked OF4 and above and given that soldiers retire ~40-45 years old the likelihood is the majority of 2403 officers (OF4 and above) were over age 40. Therefore, the latest birth was 1977 (add 3 years to update data to 1980).

⁴⁵ McChrystal, S., *Team of Teams*.

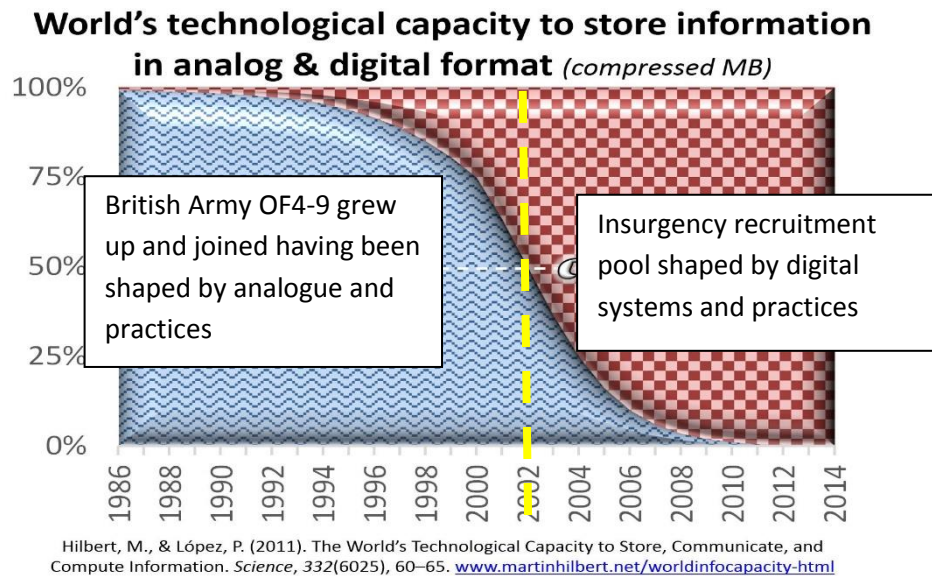


Fig 4 – Impact of Demographics on Analogue to Digital Switch.

The Impact of Organisational Culture Theory.

The second key reason why there was, and it is suggested continues to be, a desire to remain in with current practices can be found in organisational culture research and theory.

Research by Dr Rob Sheffield, author and Director at University of West of England (UWE) suggests large organisations such as the Army, seek to remain with the status quo and that inertia and resistance to change is common, normal, and understandable, particularly those operating with high risk (Sheffield, 2012).⁴⁶ His research also indicates that one of the key reasons is that the middle segment of hierarchies, where the majority of people are found, is dominated by insecurity therefore people in these areas seek conformity and will choose the safety of the status-quo over change.

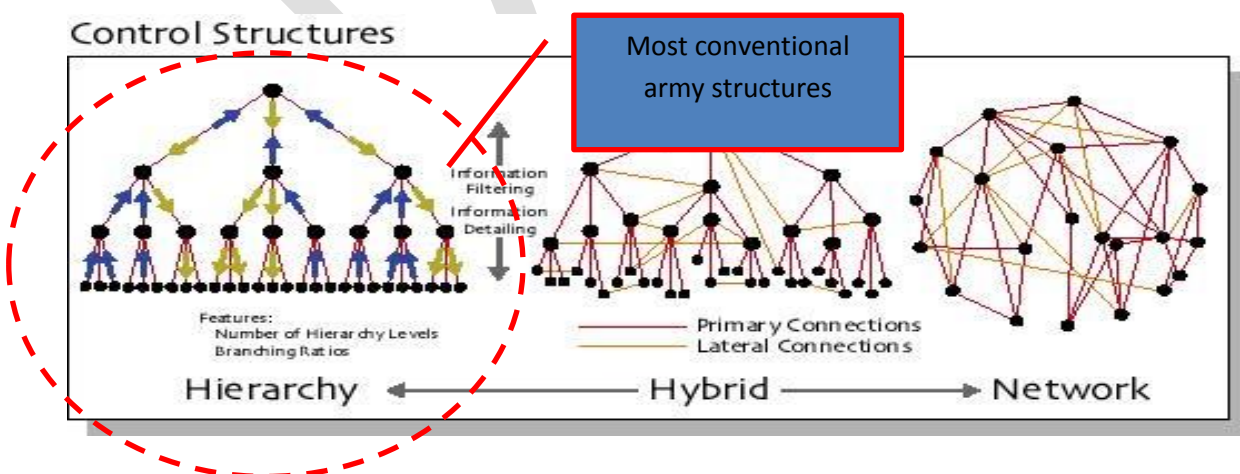


Fig 5 – Illustrative Army Structures and Layers of Management.

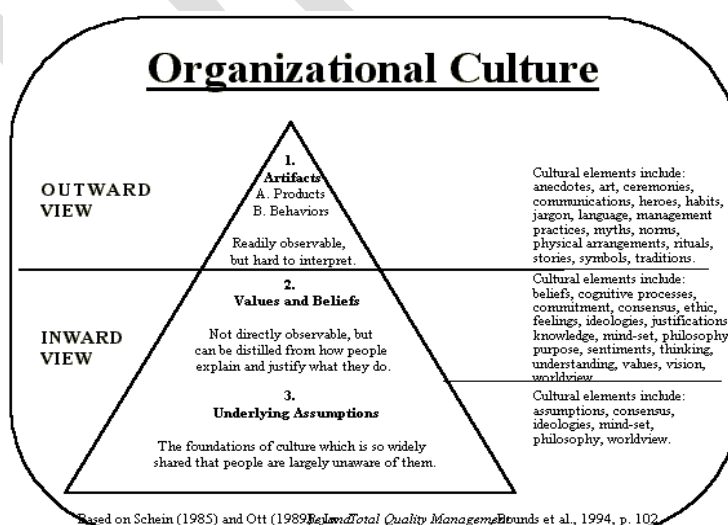
⁴⁶ R., Sheffield, (2012) [Understanding the complex organisational processes that help and hinder creativity and innovation.](#)

Sheffield's research is supported by Rosenbach et al in their 2012 book, *Contemporary Issues in Leadership*. They found that long established organisations create strong systems and processes, supported by a staff who find it difficult to think of alternatives.⁴⁷ Whilst the psychologist Kurt Lewin in his research into the area is more succinct when he likens it to being a system frozen in time.⁴⁸ He goes on to suggest it is one where new ideas are seen as novel and it is a commonly held view that the first instinct for most is to reject novelty and look for reasons as to why it may fail.

The research is underpinned by theory, particularly that of the strength of implicit cognition, and conformity theory. The first theory once again leads to the importance of the 'mind', suggesting it is often the memory, perception, attitudes, and stereotypes that come to fore when shaping behaviours (outcomes). Therefore, if the middle leaders are in an organisation that is dominated by hierarchical, linear approaches, this will form the basis of their memory and stereotypes, and it is this that they will seek to maintain. Whilst conformity has been proved to be a hugely powerful and influential trait even those who intuitively believe in a different answer or approach will conform with the vast majority.⁴⁹

There are obvious dangers in creating such a culture such as 'blind spots' resulting from group-think.⁵⁰ However, it is also wholly understandable that the behaviours of an Army are likely to reflect those of the senior cohort and be unchallenged by the majority.

The Impact of Cognitive Shaping. The previous two sub-sections have therefore highlighted why it is understandable that armies who entered the new character of conflict in 2003 still continue to struggle to achieve the agility sought in new doctrine. The implications of not addressing the issue can be found in Organisational Culture theory, particularly that of Dr Edgar Schein (fig 6).



⁴⁷ Rosenbach, W.E., Taylor, R.L., Youndt, M.A., (2012), *Contemporary Issues in Leadership*, Boulder: Westview.

⁴⁸ Grant, A., (2017), *Originals: How non-Conformists Move the World*, New York: Allen, p40.

⁴⁹ Simple Psychology, *Asch Experiment* (2008), <https://www.simplypsychology.org/asch-conformity.html>, [accessed 22 Mar 17].

⁵⁰ Bazerman, M.H., Tenbrusel, A.E., (2013), *Blind Spots: Why we Fail to do things right, and what to do about it*, New York: Princeton.

Fig 6 – Edgar Schein Organisational Culture Model.

Schein's research is reflected in a model which suggests the product and behaviours of an organisations (level 1), that is how it does things, is influenced by two primary layers. These layers include the beliefs, characteristics, values, and notably *thinking*, of an organisation (level 2 and 3). Therefore, in the case of an army, if it, or more appropriately those who have the power to influence and decide, think and behave in a linear, hierarchical, manner which seeks logic and predictability as is argued in this paper, its practices and behaviours will also reflect this.

Evaluation of Surprise, Demographics, Organisation Culture. Simplistically, armies continue to default and/or prefer their hierarchically dominated C3 systems because the formative experiences and understanding of the empowered decision makers continues to heavily influence their thinking. This in turn shapes the organisational culture to adopt and support similar thinking and practices and is broadly welcomed because it maintains the status quo; a generally acceptable position for most in the organisation. Therefore, there appears to be two key target audiences; senior decision makers, and the middle-level of leaders.

The good news is that understanding this influence and outcome also highlights a route to change. If an organisation can change its thinking and attitudes then its behaviours and outputs will likely change as well. This is supported by contemporary research conducted in 2014 by McKinsey. They found new strategies fall short if they (organisations) fail to address the underlying mind-set of individuals. Concluding organisational change cannot be separated from the need to change individuals. Conversely it found, if organisations do identify and address pervasive mind-sets at the beginning of the change programme they are four times more likely to succeed.⁵¹

Recap

At this point in the paper it would be worth briefly recapping on the findings thus far. Firstly, it would be fair to suggest CGS and others were right to identify the 'mind' as being a key facet of future warfare. The environment is complex, unpredictable, and a variety of concurrent new capabilities has created an environment unseen previously. Therefore, the *operational performance standard* is something akin to that of: 'being capable of effectively operating in a complex character of conflict.'

Secondly, to be effective in the new operational environment requires agility, as has already been identified in doctrine. To achieve agility requires, the traditional hierarchical, analogue shaped,

⁵¹ McKinsey Quarterly, *Change Leader, Change Thyself*, March 2014.

thinking and practices which are prevalent in most armies, to be joined with the ability to think and practice in networked environments. As again has been identified in new doctrine.

However, it is also apparent that whilst armies have identified the need for change they are finding the transition extremely difficult. This is partly because the demographics and organisational culture of most armies are still generally aligned to, and shaped by an analogue hierarchical world. Aspects which continue to dominate thinking and practice and are preventing the embracing of a full and deep understanding of the new environment. Therefore, there is a need to provide a deep understanding of the need for change and what it looks like, as well as additional cognitive capability to balance the existing capability to be operationally effective and stimulate practices that achieve agility. This is because 'warfare of the mind' requires an army to not only consider the mind of the audiences but also to consider its own 'mind'.

Therefore, the *training performance standard* (TPS) is; 'to be able to think creatively, innovatively, and imaginatively.' Whilst the mission for training and education professionals is, '*to develop, nurture, and practice, a deep understanding of the new character of conflict, and the appropriate cognitive capabilities, to ensure an army can operate effectively now and in the future.*'

As mentioned in the introduction, the operational context may have change but many of the tools, research, theories, that can lead to the solutions, are not new. Furthermore, the route to achieving the solutions is not new either, it is one that armies have followed since the days of Sun Tzu, if not before, that of training, education, and practice. It is therefore to this area, and in particular the training and education interventions needed to achieve the Mission and the TPS, that the paper now turns.

Training and Education Interventions for the New Complex Character of Conflict

Identifying and finding the Cognitive Capability. Fortunately, whilst doctrine has suggested the need for new cognitive capabilities in a complex world, significant research also exists that identifies what this comprises.

The UK's Chartered Institute of Personnel and Development (CIPD), The Institute of Employment Studies, The Institute of Directors, and many others have commissioned and published research into the views of respected analysts into future skills and approaches in a complex world. They all conclude that workers of today and the future needed to have **novel and adaptive high level**

cognitive skills and open-mindedness. Additionally, and importantly this is not an argument that suggests all previous cognitive practice and behaviours should be discarded, rather that they need to be enhanced to create a *balance* of old (linear) and new thinking (non-linear):

“Scholars have recently asserted that a balance or versatility of linear (rational) and non-linear (non-rational) thinking styles is essential for effective ethical and entrepreneurial decision making, and for building and sustaining an innovative organizational culture.”⁵²

Whilst research and experiments conducted in 2004 by Dutch psychologist AP Dijkstenhuis, coincidentally roughly the same time as there was growing recognition of a change in character of conflict, identify where to find the cognitive skills highlighted by the CIPD and new doctrine. Dijkstenhuis’s experiments identified individuals using *unconscious thinking* are more able to deal with complex issues (2004).⁵³ If this finding is considered in terms of the widely accepted ‘theory of the mind’ from Dr Kappas, it can be seen that they lead to an area of the mind known as the sub-conscious where innovative, creative, intuitive, thinking is found. Furthermore, this area is said to constitute approximately 80% of the brain’s thinking power.

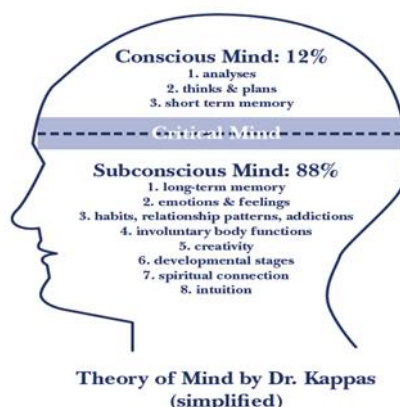


Fig 7 – Dr Kappas Theory of Mind

It is acknowledged there is a growing recognition within the Defence community of the relevance and importance of the sub-conscious capability and its applicability for the complex environment.⁵⁴ However it is not systemic and the strength of the existing dominant practices continue to ensure the *application* of military thinking continues to revolve around, logic and analysis, which seeks to

⁵² K.S. Groves, C.M. Vance, Linear and Nonlinear Thinking: A Multidimensional Model and Measure, The Journal of Creative Behaviour, Vol.49, Issue 2, p111-136, June 2015.

⁵³ A.P. Dijkstenhuis, *Where creativity resides: The generative power of unconscious thought*, Consciousness and Cognition 15 (2006) 135–146, 20 Jul 2004.

⁵⁴ Career related courses at the UK Defence Academy include electives that provide understanding of unconscious and conscious thinking.

achieve predictability. The latter being cognitive attributes which are anchored in the conscious mind; an area of the brain which constitutes approximately 20% of the overall brain power.

- Conscious – The deliberate ways of thinking about problems based on logically, predictable, analytical methods, often shaped by experiences and organisational practices.
- Non-conscious – The more intuitive and differing ways of coming to a solution, often as a consequence of trying something different.

In summary, if training and education interventions are capable of accessing, stimulating, and practicing sub-conscious thinking, the cognitive capacity and capability of individuals will increase significantly. Furthermore, if the current embryonic shoots of subconscious brain training can be made systemic and widespread, an army is likely to develop the creativity, innovation, and intuitive approaches that lead to effective solutions for the complex environment. Importantly, and if nurtured and practiced, it will begin to systemically change the organisational attitudes, and therefore the behaviours and outcomes leading to the agility and intellectual edge sought by CGS and others.

The Training Interventions

A Programme of Interventions. As has been argued it is essential to develop and implement training and education interventions that access the sub-conscious thinking. However, any programme needs to ensure that these skills become systemic and therefore it must include consideration of practicing the skills.

Furthermore, to reduce the inherent organisational resistance to change, identified in the previous section, the interventions should be introduced in a staged manner (detailed below). The first stage needs to introduce techniques or skills which develop the ability to access sub-conscious thinking, alongside an education package aimed at developing a deep *understanding* of why the change needs to occur. The *understand* interventions must move beyond simply articulating a doctrinal requirement. They need to reflect the complex operational environment in which they have fought, and will likely need to fight again. Military personnel intuitively engage with context that is embedded in reality, and are stimulated by stories and anecdotes, therefore the current insurgency environment must be part of the understanding contextual wrap.

Once the combination of 'understanding' and 'new cognitive ability' is achieved the combination requires practicing, and applying, as indicated in fig 8 (stage 3). The outcome of the overall package should lead to an army that is more willing and capable of adopting flexible empowered fluid structures and networked C3, and therefore achieving the desired agility required in the new character of conflict (stage 4).



Fig 8 – Programme of Training, Education, and Practice Interventions.

Stage 1 - Accessing the Sub-Conscious Thinking of the Target Audiences.

Firstly, training personnel at all levels to routinely access their sub-conscious brain should be part of all individual career related training and education programmes.

- Sub-conscious Brain Training.** The following interventions are not exhaustive but offer an indication of some of the ways to achieve the requirement. Appropriate brain training exercises, critical thinking exercises, meditation, visualisation, unconscious arithmetic are some of the current widely practiced methods.
- Command and Leadership Training.** All command and leadership training and education should introduce emergent leadership techniques and practices from organisations operating successfully in complex environments. For instance, social

leadership,⁵⁵ the genuine application of intent,⁵⁶ and the potential of Holacracies⁵⁷ are all being utilised effectively by organisations operating in complex environments. Whilst emergent complexity leadership theory is challenging current theories:

‘an interactive system of dynamic, unpredictable agents that interact with each other in complex feedback networks’ It suggests that organisational contexts and needs are too complex to be answered by leaders and followers in a simple exchange relationship and therefore that leadership occurs within a ‘complex adaptive system’.⁵⁸

This is not to say these theories should replace current leadership theories but in an age of complex disruption they should be *additional considerations*. Particularly as studying new techniques is a facet of undertaken by many others, including adversaries. As early as 2004 Abu Bakr Naji was encouraging Islamic State and al Qaeda to learn from management studies and theories which have “...*recently* been published, since they are consonant with the *nature of modern societies*” [authors italics].⁵⁹

- **Senior Leadership Training.** Thirdly, senior commanders and leaders from the ‘analogue age’ need to be *trained* in how to be more creative and innovative, and importantly *educated* in the benefits that can accrue. The *training* aspect should include the sub-conscious access techniques already detailed in the previous section. Whilst the *education* package needs to concentrate on *influencing and convincing* through examples and stories of how creative and innovative, open-minded thinking has led to changed organisational practices and success. These examples need to come from, the practices of adversaries, the commercial sector such as that which has been achieved in the Gig economy by people such as Reid Hoffman founder of LinkedIn.

“If you want your organisation to be able to survive in an environment where change is rapid and disruptive innovation rampant, you need to develop the adaptability that is the hallmark of this ecosystem”.⁶⁰

Whilst not forgetting the examples of benefits and success that have been achieved within the military sector through the adoption of new approaches such as that of Gen McChystal in Iraq.⁶¹

⁵⁵ J., Stodd, *The Social Leadership Handbook*, 2nd edn., (2016).

⁵⁶ D., Marquet, *Greatness: Turn the Ship Around*, Inno-versity (2013), https://www.youtube.com/watch?v=OqmdLcyES_Q [accessed 7 Dec 16].

⁵⁷ Robertson, B.J., (2016), *Holacracy: The Revolutionary Management System that Abolishes Hierarchy*, London: Penguin.

⁵⁸ M., Uhl-Bien, R., Marion, and B., McKelvey, (2007) Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *Leadership Quarterly*. Vol 18. pp298–31.

⁵⁹ B., Fishman, p217.

⁶⁰ Hoffman, R., (2014), *The Alliance: Managing Talent in the Networked Age*, Boston: Harvard Business Review Press.

In 2004 General Stanley McChrystal, Commander of Joint Special Forces Command in Iraq, turned a losing situation using traditional warfighting methods and capabilities, to a winning situation using revised approaches. His enemy, whoever that was, was not operating in the same manner, it was unpredictable and was unlikely to become predictable in order to make things easier for McChrystal and his team. What McChrystal recognized was his enemy was an organism not a machine, they created and dissolved capability through the exploitation of networks built on technology, empowerment, and shared belief.

He realised that in order to fight and win it is no longer good enough to simply be efficient, you need to be agile, flexible, and quick and he needed to change. He identified his own problems. The processes and practices of his 'machine' were efficient but they also militated against being capable and effective. Instead, they created silos of information, overly-protective teams unwilling to cooperate, and reinforced a tendency for centralized C2. Furthermore, he recognised complexity is difficult to predict therefore he did not spend an inordinate amount of time trying to predict, but learnt to live with it.

He set about creating 'match' by ensuring as many people as possible understand the intent and allow local authority to spot the opportunities. He had to restructure and created networks of teams that operated within a framework and culture of empowerment to the lowest practicable level, not hierarchies. He adopted an approach of 'shared consciousness' encouraging open, flat, and widespread communication, as opposed to closed 'need to know' hierarchically controlled information flow. At one stage he had over 7000 people listening and contributing to his weekly Command Group. His force began to replicate an organism as opposed to a hierarchical machine, with speed and scale akin to his adversaries. He then created over-match by bringing to bear his access to greater lethality and reconnaissance than available to his enemy. McChrystal is clear that by sharing consciousness amongst his teams they were able to move from conducting 10 raids per month to 300 over a three year period.

In achieving these results McChrystal had to adopt new thinking (utilising non-conscious approaches), structures that could adapt into networks and display the characteristics of organisms, and a leadership approach that willingly relinquished power and control to very low levels

Stage 1 - Understanding the New Character of Conflict. Combined with the sub-conscious brain training activities there is a need for the target audience to understand why the new capability is required. This 'understanding' needs to be set within a context of the environment in which they are required to operate to provide realism and therefore gain traction. Today's senior and mid-level leaders and commanders need to study and understand their adversaries: "establish...what kind of war you are embarking on."⁶²

Training and education interventions must continue to recognise and reinforce the need for a pan-governmental approach to operations, be it on home soil or overseas. However, when it comes to *prosecuting* the lethal aspects of any strategy this remains predominantly a military responsibility.

As such command and leadership programmes should continue to focus on developing a deep understanding of the *nature of warfare*, as most currently do. However, it needs to be joined with a deep understanding of the *character* of conflict, not just a generic view (important) but also an understanding of the actors, adversaries, audiences, and enemies of the time. Without this the application of Integrated Action or Unified Approach is hugely dangerous in the complex world of

⁶¹ McChrystal, S., *Team of Teams*.

⁶² C. von-Clausewitz, *On War*, (1832), edited and translated by M.E. Howard, P.Paret, (New Jersey: Princeton, 1989),

today. Furthermore, the effectiveness of networked thinking and practices required to achieve agility is not recognised, and therefore developed. Whilst the training interventions lack focus and reality therefore the likelihood of enduring and systemic change is degraded. The result being more, and often strategically impacting, incidents such as burning the Koran, or Abu Ghraib, and Baha Mousa, will continue to be high, and armies will continue to be surprised at the scale of the reaction. Therefore, training and education packages for mid-level and senior leaders must include:

- **Nature of Conflict.** The understanding of the nature of war needs to continue to cover the enduring concepts which are probably already common to the training syllabus. Subjects such as, what shapes Defence policy and how Defence works, closing with and if necessary killing the enemy, strong ethical leadership, motivation, risk as a threat and opportunity, and other such enduring factors of warfare. Furthermore, the enduring 'nature of warfare' luminaries such as Sun Tzu, von Clausewitz, and Jomini, should be routinely offered and critically assessed for their validity in the current and foreseeable environment.

Changed Character of Conflict. Interventions need to be wrapped in a deep understanding and practice of what constitutes the *character of conflict* of **today**. This may change in the future however it is today's wars and conflicts that leaders, commanders, and soldiers must fight. Furthermore, if integrated action or unified action are to be effectively applied there must be a thorough understanding of the motivations, interest, values, approaches of the various audiences.⁶³

Therefore, today's training and education context should include issues such as a thorough understanding of Zarqawiism and how it shapes the actions of Islamic State, and its similarities and differences with Maqdisi's influence in Al Qaeda. Abu-Bakr Al-Baghdadi and his influence on Islamic extremism would be studied. Understanding that the vast majority of people are audiences, but for many people in the Middle East the West starts from a position of mistrust and a default position of not wishing to see an enduring Western intervention and influence.⁶⁴ Where the need to understand the motivations and needs of actors, adversaries, and enemies across the Middle East and are developed but not just a coalition perspective. Commanders and leaders should be schooled in the differences and shared beliefs are between Shia and Sunni and how humility and an understanding of Maslow Hierarchy have a place in 'soft power'.⁶⁵ Gaining an understanding and grasp of why nationhood may be important to conventional armies but not to some adversaries.

⁶³ Atwan, A.B., *Islamic State*.

⁶⁴ Cockburn, P., (2015), *The Rise of Islamic State: ISIS and the New Sunni Uprising*, London: Verso.

⁶⁵ Todenhoefer, J., (2017), *My Journey into the Heart of Terror: Ten Days in the Islamic State*, Vancouver: Greystone.

Whilst at the tactical purely military level training and education interventions would include recognition that Islamic State is transitioning between an insurgency group akin to the IRA or Irgun to that of Mao Zedong's 'state army.' Therefore, appropriate tactics may need to be adopted dependent on the state of transition; noting that Islamic State is equally comfortable in transitioning back again. Additionally, that Islamic State and Al-Qaeda will engage when they believe they have an advantage but disengage when under pressure, therefore tactically fixing them is a key military skill.⁶⁶

Commanders, staff officers, and leaders should be trained and educated to understand that whilst a new character of conflict it does not mean that trends, opportunities, risk, manoeuvrism, and operational art remain valid concepts. Therefore, identifying the fault lines, centres of gravity, and having measurements of effect are still sound approaches. However, they need to be learnt in a valid and current context and measured by effect and lessons learnt (which in this case is unlikely to be the complete destruction of the enemy), not simply the ability to follow a process.

Stage 3 – Practicing and Shaping the Organisational Culture. Developing the cognitive ability and understanding of the current character of conflict is only one part of creating capability; it creates competence but not capability. The latter comes from practice, experience, and learning with others, in the situation or as close to it as possible.^{67 68} Therefore collective training must routinely include complexity and unpredictability, within a culture of, failure will occur and provides valuable lessons. Whilst normal daily business practices should reflect and adopt the behaviours desired in the operational environment.

- **Critical and Creative Thinking.** Leaders at all levels should seek to increase the use of critical and creative thinking techniques across the Army to reduce cognitive bias and create innovative agile outputs. This approach needs to be coupled to the new leadership practices highlighted previously and requires commanders and leaders to seek out those who can add value to decisions not simply follow a rank based hierarchy. Such an approach supports US Human Strategy Objectives 1.1, 1.2, 1.4, 3.2, and could assist in addressing one of the key Strategic Lessons in the Chilcot Inquiry, that of the negative influences of 'group think.'⁶⁹
- **Red Teaming.** The organisational culture should encourage constructive challenge, discussion, and alternative perspectives during routine business; red teaming should not

⁶⁶ Fishman, B., *The Master Plan*.

⁶⁷ Matthews, P., (013), *Informal Learning at Work: How to Boost Performance in Tough Times*, Milton Keynes: Three Faces.

⁶⁸ C., Jennings, 70-20-10 Institute, <https://702010institute.com/> [accessed 10 Jan 17].

⁶⁹ US Army, *The Army, Human Dimension Strategy* 2015, p13.

simply be an operational attitude and practice. Ultimately a decision will be made, and at the appropriate time, however accessing as wide a view as possible, without judgement, should be the default practice. In formal training 'Red-teaming' should be routine and regular during planning activities, as is becoming increasingly the case. However importantly it should be, delinked from any main events lists or decision support matrix activities, not embedded in Excon capabilities, or have sight of the 'blue' plan. Confidence needs to be shown to allow red-teaming 'outside the rules' to create complexity; this will also need a recognition that failure will occur and should be a lesson not a 'career defining moment'. The latter induces risk aversion and a lack of innovation and creativity.

In 2002 the US conducted the 'wargame' Millennium Challenge, it cost \$~250m with the US generals enjoying unparalleled access to information. They had new analytical tools and interactive planning facilities alongside detailed estimate practise, and believed they could finally 'lift the fog of war.' The red team planner however decided to act in a manner that was unpredictable, empowered, and networked using basic methods. He accepted that he was always in command but rarely in control, refused to be swayed by mechanistic process, and accepted this context to be the normal not the abnormal. By the end of the exercise, which was concluded after only 2 days, half the US fleet was on the sea-bed and 20,000 service personnel killed without firing a shot.⁷⁰

- **Practice.** Exercises and failure must be regular and frequent, without them the ability to turn competence into capability is severely limited. It is through experience of frequently conducting an activity, often failing on route, that organisations become more effective or capable.⁷¹ Practice, and acceptance of failure, are fundamental in achieving excellence, recognising that it is often the one who fails most in training who is successful because they are willing to stretch beyond the accepted.⁷² An Army must regularly and routinely practice its individual and collective skills in as realistic a setting as possible, including where applicable that of simulation. The need to ensure they have a process that is a framework for thinking, such as an estimate, but that the process is not the key output from the intervention, rather that of effect and lessons learnt.

Mathew Syed, in his best-selling 2011 book *Bounce*, provides clear insight into the importance of practice, citing Mozart and many others who through practice, not natural ability, created excellence. Syed cites a visit to an ice rink where most skaters are

⁷⁰ Price, D., (2013), *Open: How We'll Live, Work, and Learn, in the Future*, London: Crux.

⁷¹ Syed, M., (2011), *Bounce*, London: Fourth Estate.

⁷² M, Syed, (2011).

floating serenely and beautifully across the ice, except one. This individual was consistently failing to achieve a particular movement. The individual became a champion skater because she was unafraid to try new ideas, wanted to stretch her ability, and was prepared to fail.

Stage 4 - Achieving Agility through Structural Flexibility.

Finally, to turn

the creative innovative thinking attitudes into behaviours or outputs an army must be willing to adopt and practice fluid networked structures. Developing the creative and innovative thinking highlighted previously is likely to result in a greater willingness to develop flexible solutions. However, this will take time and therefore the introduction of training and practices which encourage hybrid deployable structures, with Company or Platoon Groups being the key and empowered capability, is essential. Importantly it is what adversaries currently practice, albeit with different groupings, and it allows them to achieve simultaneity at speed. Adopting this approach will provide the environment in which the new cognitive capabilities envisaged in this paper can be fully exploited to the lowest practicable level. It is also aligned with current doctrinal requirements:

“The particular nature of friction in land conflict, coupled with the necessary organisation of land forces, has implications for the way in which command is conducted. There are a number of methods, but decentralised command is highly effective as it empowers ...crucially [for the army to be], an adaptable organisation requires mental and physical flexibility to adapt at sufficient tempo.”⁷³

Furthermore, it is supported by research by Amy Edmondson, a leading Harvard expert on organisations in a complex world, who reinforces the efficacy of adopting such practices [flexible structures – authors note] in environments that are novel and have compressed time for decision making:

“...when leaders lack the full set of expertise and information needed to design and control the work, or when situations change faster than communication can flow up and down the command control structures.”⁷⁴

⁷³ ADP Land Ops (2016)

⁷⁴ Amy C. Edmondson, PhD Novartis Professor of Leadership and Management, Harvard Business School Statement on Strategic Integration at The Department of Defense Senate Armed Services Committee Tuesday, June 28, 2016.

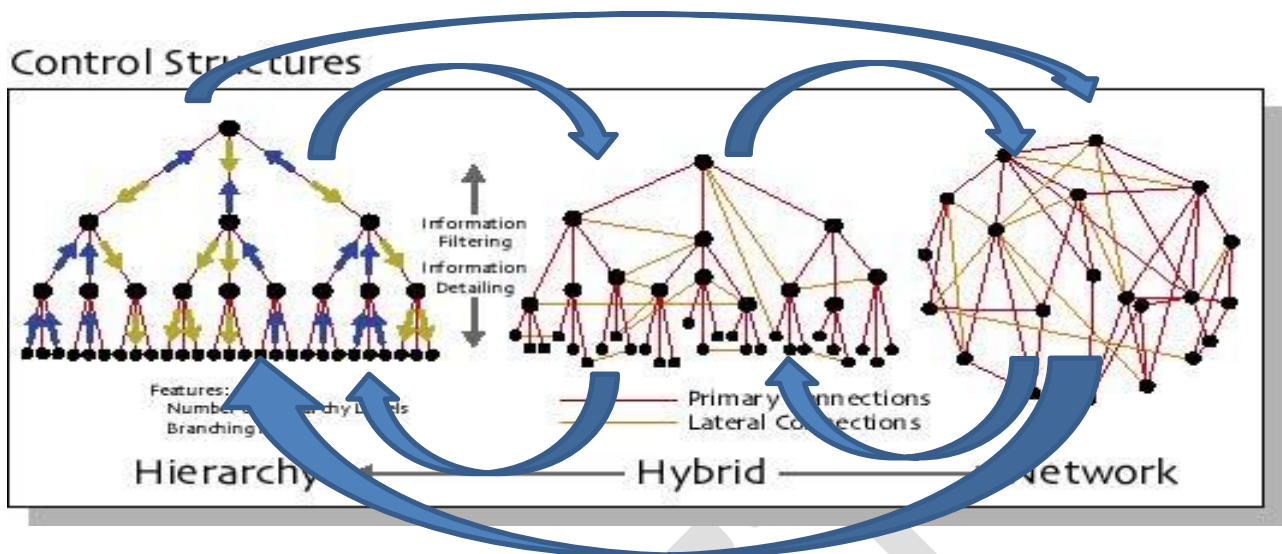


Fig 9 – Flexibility to move between different structures.

It is likely that having read last section most will have been nodding in agreement, or shaking in disagreement with the ideas and/or reflecting that they have already recognised the need for the interventions. This is because as the paper has indicated throughout, the problems may be new but the solutions are not, they exist in theory, research, and practice. What is important is the recognition and implementation of the need to create interventions that lead to appropriate and effective outcomes.

Summary

In 2003, the complexity and speed achieved through networked practices, either technological, social, or cognitive, led to what is now widely viewed as a change in the character of conflict. Adversaries disrupted the hitherto positive balance of effect achieved by conventional armies leaving conventional armies surprised and struggling. Since this time the change in character of conflict has been recognised and accepted by most armies, with new doctrine, structures, equipment and some practices being introduced.

As is the case with all new capabilities however an army needs to be *trained and educated*, to become competent in the new capabilities, and *practiced* to be deemed capable. The training and education interventions needed are wide and many, however this paper argues a key requirement in ensuring an army can operate effectively in the new character of conflict is that of ‘training its brain.’

This is because the new character of conflict requires additional cognitive capabilities. They are capabilities that have been recognised by many armies. However, they are different to those which most senior decision makers have developed over many years of service. Furthermore, the current dominant thinking practices and attitudes continue to influence organisational culture in a manner that leads to behaviours and outcomes that will limit agility. They are however capabilities that insurgents are intuitively capable of exploiting because their demographic make-up and organisational 'culture' and practices are inherently aligned with realising the benefits of these new cognitive capabilities.

The solution is not difficult, it is found in existing theory, research, and practice. The need for new cognitive capability is already reflected in new military doctrine, commercial research, and evidence from organisations who are successfully operating in complex environments. Existing cognitive and organisational culture theory provides a guide rail to what needs to be done to achieve new thinking. Whilst, the Defence Systems Approach to Training provides a process in which the answers can be found and interventions developed which close the training gap and deliver the 'intellectual edge'.

These are interventions that 'train their brain' to access the sub-conscious mind where innovative, creative, and open-mindedness can join analysis, logic, and predictive thinking. Where, individual and collective practice turns the new competence into capability, and where organisational culture is one which accepts and embraces challenge, failure, and innovation. Where armies are comfortable with genuine empowerment, flexibility of structures, and a willingness to recognise that it does not possess all of the good ideas therefore it is going to be surprised; but then bounces back quickly.

The conceptual thinking has been completed, the new structures and equipment developed and procured, now is the time for training and education professionals to create the cognitive capability to ensure an army is successful.

"New Problems, Old Theories, New Thinking"