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TYRANNY OF THE IMMEDIATE:
HOW DIGITAL COMMAND SYSTEMS UNDERMINE MISSION COMMAND

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Canada

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INTRODUCTION

Mission command is a widely adopted and popular military doctrine—especially throughout Western militaries such as the Canadian, British, US and Israeli armies—emphasizing mission-type orders and decentralized execution aligned by a shared understanding of the commander's intent. By empowering subordinate decision-making and freedom of action, mission command is seen as a timeless and enduring doctrine enabling military forces to quickly adapt to complex and uncertain warfighting environments. It is not a command and control (C2) system in itself but rather a command philosophy which guides how command and control should be done.

Interestingly, the implementation of mission command doctrine throughout Western armies at the end of the Cold War was largely overshadowed by what many described at the time as the "defence transformation orthodoxy"[1] of the 1990s based on the idea that emerging technologies of the information age had created a revolution in military affairs (RMA). Indeed, many military theorists and leaders at the time fashionably believed that the digitization of the battlefield, enabled by widespread communications, intelligence and surveillance systems would lead to a "network centric" concept of warfare giving commanders unprecedented awareness of the battlefield through information superiority which would effectively lift the fog of war and allow quick and easy military victories. However, Western experience in conflicts since then

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[1] Shamir, Eitan. *Transforming command: the pursuit of mission command in the US, British, and Israeli armies*. Stanford University Press, 2011, p xii.

have largely debunked the RMA orthodoxy and have instead inspired a return to mission command fundamentals proven by empirical experience in the crucible of battle.

Admittedly, emerging battlefield technologies such as digital communication links are crucially important in supporting command and control systems and enabling successful prosecution of operations, but a deeper analysis is warranted to better understand the potentially harmful and distorting effects that technology may have on the practice of command. This paper specifically investigates the distorting effects that digital command systems (DCS) may have on the fundamental mission command principles of decentralized execution and subordinate empowerment. DCS here are defined as the technical means used in modern command systems based on digital communication and information systems—i.e., networks, computers, servers and software applications—allowing instantaneous sharing of digitized information—e.g., orders, intelligence products—across dispersed military forces using digital communication links.

The focus of the analysis specifically targets the intermediate or tactical level—i.e., Brigades, units and subunits—of warfighting in the land environment in a complex and uncertain environment where the rationale for employing a mission command philosophy is most appropriate. The paper uses a cause and effect framework to investigate how DCS may harmfully impact mission command principles and its associated effects and side-effects, particularly related to the principles' purported benefits and rationale. Analysis is largely qualitative drawing on existing research and salient observations from case studies in recent conflicts.

This paper argues that DCS, if not well understood or used unwisely, can effectively undermine the fundamental mission command principles of decentralized execution and subordinate empowerment. The paper is divided in two sections. The first section discusses DCS effects on decentralized execution investigating how DCS actually promotes centralisation of authority and structure and describes information pathologies related to DCS. The second section investigates DCS effects on subordinate empowerment and follows a more qualitative approach identifying the causes and effects of micromanagement and the impacts of adhering to only formal methods offered by DCS. The paper concludes by synthesizing key arguments and offers recommendations going forward.

DECENTRALIZED EXECUTION

This first section analyses the harmful effects which digital command systems (DCS) may have on the mission command principal of decentralized execution. First, the rationale and purported benefits of decentralized execution in warfighting environments advocated by mission command doctrine is reviewed. This is followed by analysis of how DCS actually promotes *centralisation* of authority and organisational structure by incentivizing central control of information processing capabilities to, ostensibly, better inform decision-making. Increased technical dependencies enabling coordination between centralised resources enabled by DCS is also investigated with associative impacts on the employment of semi-contained units espoused by mission command.

Military theorist Martin Van Creveld observes in his book *Command in War*, his acclaimed study of the topic, that command is nothing more than the timeless endeavour

of coping with uncertainty in war.[2] Historical evidence confirms that in highly uncertain and complex environments such as warfighting, decentralized execution—i.e., devolution of decision-making authority to lower levels in the hierarchy—offers a proven, and arguably the most effective, way to cope with uncertainty by enabling self-contained and semi-independent units the discretion to act, and adapt, to their environments. Seen by Creveld in another way, decentralization is simply a conscious choice made by higher headquarters to reduce uncertainty at lower levels by increasing it at their own level by recognizing the fact that units with the most accurate information for decisions are those at the lowest levels actually interacting in the environment.[3] Indeed, decentralization of decision-making and execution has obvious benefits related to adaptability and resilience, as well as improved speed of decision-making and relative tempo over the enemy, allowing units to better cope in uncertain environments. This comes as a trade-off to reductions in overall flexibility and, as mentioned, situational awareness in higher levels of the organisation.

Aside from decentralizing to reduce uncertainty at lower levels, Creveld notes there is also another choice for commanders seeking to reduce uncertainty in war. This involves increasing a force's ability to gather more information about the situation—i.e., about one's adversary, their intentions, one's own forces, other factors in the environment, etc. Indeed, it appears logical that more information improves one's ability to make more informed and better decisions. And this is where DCS ostensibly offers clear advantages in enabling commanders with the technical means and improved

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[2] Van Creveld, Martin. *Command in war*. Harvard University Press, 1985, p268.
[3] *Ibid*., p274.

capacity to collect, process, and share battlefield information instantly throughout their force. Such was the rationale for the purported RMA and defence transformation initiatives of the 1990s. But increasing information gathering capabilities enabled by DCS in an attempt to reduce uncertainty and improve decision-making ability also encourages centralisation of authority, in direct contrast to the fundamental principal of decentralization advocated by mission command.

First however, it is necessary to debunk the notion that increasing information will reduce uncertainty in war when the opposite may actually occur. Indeed, as long as war remains war, no amount of information will ever eliminate uncertainty in it. This, as Clausewitz described so long ago, remains an enduring feature of the nature of war where "the precise knowledge needed to anticipate the effects of interaction is unattainable."[4] As Barry Watts convincingly argues, "friction and uncertainty will continue to persist in future wars because of the inaccessibility of information essentially distributed in space and, more importantly, time."[5] Indeed there are no technological silver bullets in the offing, no matter how attractive and effective DCS demonstrations in peacetime training or computer war simulations may appear at reducing uncertainty.

Furthermore, determining what is actually relevant from collected information— i.e., separating the signal from the noise—remains an ongoing challenge. As Clausewitz characterised it: "many intelligence reports in war are contradictory; even more are false;

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[4] Beyerchen, Alan, "Clausewitz, Nonlinearity and the Unpredictability of War," last accessed May 7 2020, https://www.clausewitz.com/item/Beyerchen-ClausewitzNonlinearityAndTheUnpredictabilityOfWar.htm

[5] Watts, Barry D. *Clausewitzian friction and future war*. No. 68. Institute for National Strategic Studies, National Defense University, 2004, p69.

and most are uncertain."[6] Combat information is not only largely ephemeral but also

susceptible to errors and deception. While DCS allows instantaneous transmission of

information across multiple echelons, the same is true of false information which may be

instantly amplified by DCS and contribute to actually thickening the fog of war. As Alan

Beyerchen describes, what Clausewitz really meant by the fog of war was that "it is not

so much about a dearth of information as to how distortion and overload of information

produces uncertainty as to the actual state of affairs."[7]

Now to return to the harmful effects of DCS on decentralization, consider for

example the self-perpetuating and cumulatively harmful effects of processing combat

information generated by DCS. British military theorist Jim Storr accurately states that

"the amount of information increases with the square of the number of people involved,

while the ability to process it only increases linearly."[8] This pathology of information was

evident during the 2003 Iraq War in which British and American tactical headquarter

(HQ) staff sizes had grown over 25% larger as compared to their 1991 Gulf War

equivalents in order to deal with the increased information generated by DCS.[9] This is a

self-defeating cycle by which the cure is worse than the disease: more staff engenders

more coordination generating more information requiring more staff to process, and so

on. Larger HQ staffs promote increased centralisation of information and, consequently,

centralisation decision-making authority.

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[6] Howard, Michael, and Peter Paret. *On war*. Vol. 117. Princeton, NJ: Princeton University Press, 1976, p117.

[7] Beyerchen, Alan, "Clausewitz…"

[8] Storr, Jim. "A command philosophy for the information age: The continuing relevance of mission command." *Defence studies* 3, no. 3 (2003), p122.

[9] Shamir, Eitan. *"Transforming…"*, p145.

It is indeed logical that decision-making authority should be resident where it is perceived that the best and most accurate knowledge of the situation is located contingent on the requirement that the means exist and are adequate to issue command and control direction to dispersed forces. It is also interesting to note that the mission command philosophy emphasizing decentralized execution largely came about as a means to cope with the fact that commanders had no technical means available at the time to issue direction and control dispersed forces during battle (e.g., Prussian forces in the Austro-Prussian War).

DCS promotes centralisation in two ways. First, by increasing both information collection capacity and information processing capacity. Second, by providing the commander and staff with the means to command and control dispersed forces prior to and during battle all the while collecting and sending updated information as required. As such, the rationale for decentralization espoused by mission command doctrine is largely subverted by DCS ability to improve decision making centrally and effectively command and control forces higher in the hierarchy.

Yet, as military theorist Robert Leonhard argues in his book *The Principles of War for the Information Age*, decision-making should reside at the level wherever the best and greater knowledge resides.[10] This is logical but it should be noted however that a mission command philosophy is not a panacea to each situation and should not be applied in all cases. As previously stated, mission command doctrine is a proposed philosophy for how to better deal with uncertainty and assumes that lower-level forces interacting

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[10] Leonhard, Robert. *The principles of war for the information age*. Presidio Press, 2009, p260.

with the environment and the adversary are better placed to act and make decisions than higher-level dislocated HQs. But in cases where better knowledge does indeed reside at higher HQs—perhaps in the context of a low intensity conflict or a nuclear standoff—then mission command principles of decentralization would not be beneficial. The other counterpoint being that DCS are designed to network the force and share information *up, down and across*. But as described by military theorist Douglas MacGregor in his observations of command in the 1991 Gulf War, DCS favoured information flows going only up where "command centers acted as information depots rather than central distribution points."[11]

Incoming information, and indeed the promise of better information, enabled by DCS can also act as a brake on decision-making. While decentralized execution provides benefits in speed of decision-making and relative tempo over the adversary, DCS can actually contribute to the opposite effect. This was evident during the 1991 Gulf War and termed the Schwarzkopf syndrome by military historians Ferris and Handel who described the syndrome of some decision-makers during that conflict as the "desire to way just one more moment, to read just one more report, the reluctance to act on imperfect knowledge because it is known to be imperfect and that at any point another report might well produce perfection."[12] Increasing DCS amplifies this brake on decision-making by giving commanders and staff the idea that the precise thing they are looking for is out there and may have already been collected but not processed yet. Of course, one

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[11] Macgregor, Douglas A. *Transformation under fire: revolutionizing how America fights*. Greenwood Publishing Group, 2003, p99.

[12] Ferris, John, and Michael I. Handel. "Clausewitz, Intelligence, Uncertainty and the Art of Command in military operations." *Intelligence and National Security* 10, no. 1 (1995), p50.

cannot know how or when one will know all the facts they need to make an informed decision.

DCS also provides the commander, based on the situation and her tolerance for risk, the means for "sudden centralization"[13] and indeed the technical ability for a much larger span of control. While technical interdependencies of DCS naturally create tighter coupling, they also enable better capability for coordination between elements. But this also encourages the centralisation, or pooling, of resources across the force for perceived gains in cost effectiveness and overall flexibility.[14] But this flies against the mission command tenet of self-contained, semi-independent units possessing the resources and means to take action. Indeed, if additional coordination, inducing more communication and information processing requirements, is required to enable decentralized execution, the perceived cost savings of pooling resources are irrelevant.

The mission command principal of decentralized execution is not only a fundamental tenet for dealing with uncertainty, but also reduces dependency and overreliance on DCS which are sure to become overloaded or interrupted in times of war. This is a timeless issue with any new technology introduced in peacetime conditions wherein rational and theoretical advantages, and indeed success during training, prove its worth. But practical war experience trumps theory. This is well described in British naval historian Andrew Gordon's book *The Rules of the Game*[15] studying British command and

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[13] Bezooijen, Bart Van, and Eric-Hans Kramer. "Mission command in the information age: a normal accidents perspective on networked military operations." *Journal of Strategic Studies* 38, no. 4 (2015), p450.

[14] Van Creveld, Martin. *Command...* p271.

[15] Gordon, Andrew. *The Rules of the Game: Jutland and British Naval Command*. Naval Institute Press, 2013.

control at the Battle of Jutland in 1916 using newly updated signals doctrine relying on new radio technology which had never been tested in times of war, and caused many C2 issues for the British when its radio communications were jammed. One of its conclusions related to signaling doctrine still applies today to modern DCS: "war-fighting commanders may find themselves bereft of communications faculties on which they have become reliant in peacetime training."[16] As such an overreliance on DCS can become an Achilles' heel for modern forces and can turn centralised organisations into inflexible and brittle ones quite easily.

Yet there are many experts, such as historian Robert Citino, who dismiss mission command principals such as decentralized execution as still applicable in today's age of highly complex weapons systems and communications technology "offering little opportunity for true independence of army units in operations involving highly mobile ground elements, tactical air, and helicopter gunships, for example."[17] But the dependencies which these new complex systems introduce are, again, a cure that is more harmful than the disease. What good are complex weapon systems if they are dependent on DCS communication links to precision sensors and GPS in a wartime situation where these are sure to be denied? In this case, a unit's self-contained and semi-independent ability to act is still required, aligned by overall commander's intent. It is evident that the decentralized execution tenet of mission command is still very much relevant in many warfighting situations.

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[16] Gordon, Andrew, "Rules…" p590.
[17] Citino, Robert Michael. The German way of war: from the Thirty Years' War to the Third Reich. University Press of Kansas, 2005, p310.

SUBORDINATE EMPOWERMENT

This section will now shift focus to a more subjective and human tenet of mission command—the psychological effect of subordinate empowerment. First a description of why empowerment is such an important and powerful concept in mission command philosophy including a description of outcomes related to creativity and initiative is described. Then follows central arguments on how DCS may have harmful impacts on subordinate empowerment, namely with respect to its potential to be used to micromanage and frustrate subordinates. Analysis also discusses how DCS may eliminate more informal means of communication such as directed telescopes and unstructured interactions which are critical to effective command, trust and creativity.

Mission command philosophy emphasizes delegated authority and subordinate empowerment to encourage subordinates to exercise their own judgement and initiative allowing the force to exploit fleeting opportunities on the battlefield. Eitan Shamir, in his work on studying the integration and adaptation of mission command within the US, British and Israeli armies, observes that empowerment is difficult to achieve because of natural human tendencies making it difficult for commanders to relinquish control, and for subordinates to initiate actions without awaiting instructions.[18] The psychological concept of empowerment implies "strengthening an individual's belief in her ability to effect change and control situations."[19] Furthermore, Shamir notes that empowerment is highly dependent on a superior's enacted behaviour towards subordinates resulting in a Pygmalion effect—i.e., a self-fulfilling prophecy. For instance, superiors who assume

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[18] Shamir, Eitan. *"Transforming…",* p17.
[19] *Ibid.,* p18.

their subordinates are untrustworthy and who routinely monitor their actions to confirm whether they are accomplishing their tasks to the standard prescribed will result in subordinates who feel powerless leading to stifled initiative. The opposite is also true.

Mission command doctrine has also been described as a contract founded on implicit trust between a superior and their subordinates under which the superior trusts subordinates' ability to act "wisely and creatively without supervision when faced with unexpected situations."[20] Trust also requires an acceptance of responsibility and risk by the superior commander.[21] Critical to keeping a subordinate's actions aligned is the superior's intent which must be "communicated in the simplest and clearest manner."[22] Benefits directly related to subordinate empowerment include initiative and creativity but require trust; acceptance of risk and responsibility; and simplicity in communicating the commander's intent.

Perhaps the most harmful effect of DCS is their potential to be used by commanders to *over* control their subordinates' actions leading to stifled initiative and a toxic erosion of trust. Case studies from recent conflicts such as the 2003 Iraq War[23] and the 2006 Lebanon War[24] provide compelling evidence of the harmful ways in which newly introduced DCS, such as the US Army's Blue Force Tracker (BFT) and the Israeli Defence Forces' (IDF) *Tzayad* digital ground force system, were used by superiors to

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[20] *Ibid.,* p3.
[21] *Ibid*., p26.
[22] *Ibid*., p27.
[23] Sowers, Thomas S. "Nanomanagement: superior control and subordinate autonomy in conflict: mid-level officers of the US and British armies in Iraq (2003-2008)." PhD diss., The London School of Economics and Political Science (LSE), 2011.
[24] Shamir, Eitan. *"Transforming…",* p186.

micromanage their subordinates—and indeed in many cases their subordinates' subordinates—actions.

Thomas Sowers' research on the topic of micromanagement in the US and British Armies during the 2003 Iraq War is particularly illuminating. He explains how tactical DCS such as the US Army's BFT helped to lift some of the fog which had almost always obscured dislocated subordinate activity from superior observation in the history of warfare. Indeed, before DCS, high transaction costs to monitor subordinate actions such as a subordinate's situation report to higher or a superior's battlefield circulation visit largely prevented and reduced opportunities to closely monitor subordinates. But modern DCS, such as BFT, can automatically communicate information on the network thus virtually eliminating transaction costs (minus the technical setup) for both subordinates and superiors. DCS thus presents an attractive means to help lower long-standing information asymmetries between superiors and subordinates.

In many cases, the superior-subordinate information asymmetry may actually be reversed by DCS wherein superiors possess more information and awareness on their subordinates (and indeed their subordinates' subordinates lower in the hierarchy) than the subordinate commanders themselves. For example, US Army BFT in the 2003 Iraq War created a digital divide under which all BFT systems sent information up to digital HQs (e.g., Brigades and up) who had more positional information on their subordinate units' (e.g., Battalions) than the unit HQs themselves due to lack of digital communication means at these lower level command centres. This created not only frustration at lower levels for those on the wrong side of the digital divide, but also created a perverse sense of omniscience at higher HQs which stifled subordinate initiative. For example, one US

Army officer in Iraq described a situation in which his subunit was manning a checkpoint close-by to where another subunit had just been attacked and who were now requesting backup support. But as soon as the members on the checkpoint started moving out, higher headquarters—three levels above the subunit—called in to inquire why these soldiers were moving and subsequently ordered them to stay in place.[25] Such situations result in what retired Marine General James Mattis refers to as "Mother May I" timidity in which forces knowing they are being observed will not act without requesting permission.[26] This describes the well-known Hawthorne effect by which individuals alter their behaviour in response to the awareness that they are being observed.

Aside from facilitating micromanagement, DCS can also erode subordinate empowerment and trust by flooding subordinate HQs with too much information and information requests whereby subordinate HQs, with smaller staffs, are required to spend much of their time "feeding the machine" with information from which they draw little to no benefit simply to appease higher headquarters' information requirements. This often results in inaccurate information which is rewarded for its immediacy but not its veracity[27] further undermining trust. This is especially evident in daily battle rhythm reports and returns. For instance, lower-level US Army tactical subunits in Iraq required to submit daily Powerpoint "storyboards" of their patrols and activities demanded by higher HQs which not only causes frustration—these subunits usually only had one or two computers on which to produce the data—but also reduces subordinate capacity for

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[25] Sowers, Thomas S. "Nanomanagement…", p109.

[26] Mattis, Jim, and Bing West. *Call Sign Chaos: Learning to Lead*. Random House, 2019, p43.

[27] Van Creveld, Martin. *Command…* p272.

their own planning and creative thinking.[28] Such rote information requirements add little

value to tactical units who are at the mercy of headquarters many levels up wherein even

their own immediate HQs are powerless to reduce demands imposed by higher. The same

logic applies to pushing all known and available information down the chain to

subordinates via DCS following the old signals rule that "volume expands to meet

capacity"[29] and that "signals capacity tends to be defined by how much the senior end can

transmit, rather than by how much the junior end can conveniently assimilate."[30]

Similarly, the permanent and recorded nature of DCS—unlike transient communication

means such as radio, telephone or face to face—further exacerbate risk aversion of higher

HQs whereby they are compelled to down-load as much information as possible to

subordinate elements, facilitated by DCS, to avoid being attributed blame later on for

having not sent a critical piece of information.

DCS also fosters a neglect of other independent means of information collection by

commanders who come to rely on DCS due to the seeming ease of transmitting

information and reports. But relying solely on formal reporting up the DCS chain of

command necessarily implies a loss of information as each level in the chain summarises

and distorts the message before passing it on higher which not only clouds situational

understanding but delays timeliness of information. As Creveld observes, commanders

require directed telescopes[31] to meet their specific information needs using their own

independent means to better appreciate and inform their situational understanding. This

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[28] Sowers, Thomas S. "Nanomanagement…", p124.
[29] Gordon, Andrew, "Rules…" p582.
[30] Ibid., p584.
[31] Van Creveld, Martin. *Command…* p272.

not only avoids imposing additional reporting burdens on units further undermining trust and empowerment, it also leads to more precise situational understanding and better informed orders at higher levels.

DCS has also been shown to contribute to an increase in operation orders' length and complexity leading to unclear understanding of mission objectives and commander's intent. For instance, British Army planners in the 2003 Iraq War regularly issued orders which were over 100 pages, expressing unclear mission tasks and commander's intent, and were also routinely overcome by events by the time they had been issued. The same complex language was found in IDF orders during the 2006 Lebanon War in which soldiers were unclear as to the purpose (intent) of their assigned tasks.[32] DCS contributes to this problem in two ways. First, DCS allows virtually unlimited size of written orders to be sent instantaneously across dispersed forces. There is no longer a forcing function in reducing size, complexity and timeliness of orders as there would be if using non-digital means such as onion paper or talc overlays were hand-carried to subordinates. Second, the ability for DCS to control and synchronize forces in time and space during an operation leads to overly complex orders in which planners seek to synchronize effects and over-control every minute detail of one's own forces enabled by DCS tools during an operation rather than focusing on the enemy; clearly a violation of mission command principles.

DCS also stuns subordinate creativity and innovation by largely eliminating the need for informal and unstructured methods of communication which are so vital to creative thought. Superiors and subordinates who are connected digitally will more likely reduce

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[32] Shamir, Eitan. *"Transforming…",* p186.

face-to-face interactions and, for example, avoid the exchange of liaison officers between staff HQs in favour of the more cost-effective—and seemingly adequate—formal methods provided by DCS. Such mechanized processes for information exchange offer benefits related to precision, standardization and brevity but are easily interrupted and reduce flexibility as compared to informal methods.[33] Indeed, as Creveld observes, unstructured interactions must be preserved alongside DCS which not only supports subordinate empowerment and fosters trust between commanders and subordinates, but also has the side-benefit of improving formal DCS communication quality and reducing its quantity.[34] This is especially crucial in modern operations as forces increasingly move to more dispersed laydowns for force protection reasons whereby superiors and subordinates are more likely to be physically separated. DCS alone will not suffice.

DCS also contribute to poor situational understanding between superiors and subordinates by creating dependencies on digital tools which do not accurately reflect the real conditions of the environment. For instance, digital maps may depict last known enemy dispositions, friendly positions tracked in real time and other data such as logistic metrics, but they simply cannot accurately describe the qualitative human factors of war which are so critical to situational understanding. Indeed, the dialectic exercise of synthesizing one' interpretation of the environment with that of their subordinates forms the basis of the command and feedback process popular with mission command advocates such as the US Marine Corps. The danger with DCS battle management tools such as the US Army's Command Post of the Future (CPOF) or the Canadian Army's

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[33] Van Creveld, Martin. *Command...* p273.
[34] *Ibid.*

BattleView command system is that commanders may come to falsely associate what is digitally depicted on-screen with reality which creates a brittle dependency on these systems which are sure to be overloaded or interrupted in war conditions. These systems also promote the McNamara fallacy wherein decisions are based on whatever can be quantitatively observed and quantified on digital battle management systems rather than focusing on the real problems requiring qualitative evaluations.

Conversely, many see DCS as not only better supporting the empowerment of subordinates and delegation of control under mission command, but that, as British military theorist Jim Storr claims, DCS and the information age creates conditions that will usher a "renaissance" of mission command due to the improved capability of forces to self-synchronise and improve shared consciousness of the commander's intent.[35] But, like any other technology, DCS has no agency and is simply a tool whose performance and effects are dictated by the human using it. But like any other tool it also shapes its user over time and may end up causing harmful effects. Indeed, it is evident that commanders must never discount the human factors for effective command in war such as unstructured face to face interactions which are so critical for building subordinate empowerment and cultivating trust, and which can never be replaced by DCS.

CONCLUSION

This paper has argued that digital command systems (DCS) may have potentially harmful effects on the main tenets of mission command and effectively undermine its

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[35] Storr, Jim. "A command philosophy for the information age: The continuing relevance of mission command." *Defence studies* 3, no. 3 (2003), 129.

practice if they are not well understood or wisely employed. These harmful effects relate to two primary ideas. First, DCS promote centralisation of authority based on the perceived ability for commanders to effectively command and control their forces via CDS during warfighting; as well as the increased capacity of CDS to collect and process information which creates centralising command centres acting as information stores rather than distribution points. The second major effect is that of harming subordinate empowerment and initiative under which DCS is used to facilitate micromanagement creating a sense of higher level omniscience among subordinates and stifling initiative. It was also argued that DCS can potentially replace informal communication means such as directed telescopes and unstructured interactions which are absolutely vital and proven for commanders to improve shared understanding of the situation, improve creativity and innovation of ideas, as well as further solidify trust between superior and subordinate.

Three recommendations are offered for DCS use. First, they must be seen as a tool to serve command and command systems. Too often military case studies observe how commanders and staff become servants to these technological tools which end up dictating command styles. The history of warfare shows that technology such as DCS can never, and should never, dictate how command is conducted. Second, DCS should be rigorously tested in war-like conditions and commanders should have alternate plans in place for their command systems to account for a loss of DCS availability. Creating a dependence on DCS is likely to be seen as a weakness by enemy forces who will quickly seek to exploit it. Finally, commanders should remember that while DCS encourages sharing of information, often times it is what is *not* included in an order or instruction which is crucial. Less is usually more. Simplicity in orders is a crucial component to

effective mission command which is often violated by over-achieving and risk-averse

planners. Commanders should set the parameters of the frame but it is up to the

subordinates to use the paint brushes to paint the picture.

BIBLIOGRAPHY

Betz, David J. "The more you know, the less you understand: The problem with information warfare." *Journal of Strategic Studies* 29, no. 3 (2006): 505-533.

Beyerchen, Alan, "Clausewitz, Nonlinearity and the Unpredictability of War," last accessed May 7 2020, https://www.clausewitz.com/item/Beyerchen-ClausewitzNonlinearityAndTheUnpredictabilityOfWar.htm

Bezooijen, Bart Van, and Eric-Hans Kramer. "Mission command in the information age: a normal accidents perspective on networked military operations." *Journal of Strategic Studies* 38, no. 4 (2015): 445-466.

Citino, Robert Michael. The German way of war: from the Thirty Years' War to the Third Reich. University Press of Kansas, 2005.

Ferris, John, and Michael I. Handel. "Clausewitz, Intelligence, Uncertainty and the Art of Command in military operations." *Intelligence and National Security* 10, no. 1 (1995): 1-58.

Gordon, Andrew. *The Rules of the Game: Jutland and British Naval Command*. Naval Institute Press, 2013.

Howard, Michael, and Peter Paret. *On war*. Vol. 117. Princeton, NJ: Princeton University Press, 1976.

Leonhard, Robert. *The principles of war for the information age*. Presidio Press, 2009.

Macgregor, Douglas A. *Transformation under fire: revolutionizing how America fights*. Greenwood Publishing Group, 2003.

Matthews, Matt M. *We were caught unprepared: The 2006 Hezbollah-Israeli war*. Diane Publishing, 2011.

Mattis, Jim, and Bing West. *Call Sign Chaos: Learning to Lead*. Random House, 2019.

Shamir, Eitan. *Transforming command: the pursuit of mission command in the US, British, and Israeli armies*. Stanford University Press, 2011.

Sowers, Thomas S. "Nanomanagement: superior control and subordinate autonomy in conflict: mid-level officers of the US and British armies in Iraq (2003-2008)." PhD diss., The London School of Economics and Political Science (LSE), 2011.

Storr, Jim. "A command philosophy for the information age: The continuing relevance of mission command." *Defence Studies* 3, no. 3 (2003): 119-129.