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14. ABSTRACT Much has been made in public spheres regarding society's movement toward a "post-privacy" era driven by leading edge digital technology and commercial electronics that increasingly "liberate" access to information. As unrestricted data increasingly penetrates and surrounds every aspect of our daily lives, the ratio of signal to noise (digital distraction) should intrigue us. From a military perspective, these trends should spark an examination of how a "privacy free" and digitally distracted future may affect military operations, in particular command and control. Most importantly, we should examine how near-term changes in societal norms of privacy may change the dynamics between commanders and their troops. This paper explores how the post-privacy era will dramatically alter the Marine Corps concept of command and control and how this dynamic can be leveraged to better educate Marines in preparation for future conflicts.					
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FUTURE WAR PAPER

Weaponizing Idiocy:

Command and Control in the Post-Privacy Age

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF OPERATIONAL STUDIES

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Introduction

Much has been made in public spheres regarding society's movement toward a "post-privacy" era driven by leading edge digital technology and commercial electronics that increasingly "liberate" access to information.¹ As unrestricted data increasingly penetrates and surrounds every aspect of our daily lives, the ratio of signal to noise (digital distraction) should intrigue us. From a military perspective, these trends should spark an examination of how a "privacy free" and digitally distracted future may affect military operations, in particular command and control. Most importantly, we should examine how near-term changes in societal norms of privacy may change the dynamics between commanders and their troops. Ultimately, the post-privacy era will dramatically alter the Marine Corps concept of command and control and we must embrace this dynamic to exploit the opportunities it may offer.

There are myriad significant implications for personal identity in a world with no privacy and increasingly distracting avenues of information. This dynamic affects not only the warfighter and the operating environment but also the command and control systems that intersect the two. "Public distraction" has similar implications regarding how warfighters make decisions. Can unrestricted feeds of data with no expectation of privacy truly aid our existing decision making processes, or will we require new processes to help us make timely decisions on the battlefield? Beset with these considerations, it may perhaps be more valuable to err on the side of opportunity rather than concern and focus on the silver lining in this increasingly cloudy digital future. This having been stated, our examination of such issues should begin by defining the concepts of "privacy free society" and "digital distraction."

Advent of the Privacy-Free Era

The notion of a “privacy free” society is not entirely novel, though examinations of the limits of privacy have traditionally taken the form of debates about the relationship between the government and private citizens.² For the past two decades, however, technological innovation and the rise of the global Internet have left governments scrambling to play catch-up. As recent developments in the Middle East and elsewhere have shown, “traditional” and even state-controlled media outlets can easily be outmaneuvered by individuals with nothing more than Internet access and a “smart device.”^{i*} This trend will only become more prominent and perhaps even normative as technology advances and smart devices leap the distance from personal property to human accessory and “wearables” become the typical mode of this technology.^{ii**} Recent social trends have also proven that there is significant interest if not a flat-out demand to adopt such wearables by government agencies that interact with the public. The likelihood of at least some privacy reduction seems clear as the U.S. Government has already shown a willingness to financially support such initiatives.³

Traditional notions of privacy are clearly undergoing a radical transformation that is being driven by users and consumers of smart devices and their wearable accoutrements. With the ability to track, document, and distribute our lived experiences in real time through the rapidly advancing technology of these devices, extant notions of privacy are being reframed. Classicist and literary critic Daniel Mendelsohn eloquently summarizes this modern dilemma,

* For the purposes of this paper, a “smart device” is defined as a light, portable, digital computer with the embedded capabilities to access traditional telecommunications and the Internet; take high-resolution photographs, audio, and video; and enable the user to store, maintain, and distribute data from this device.

** For the purposes of this paper, a “wearable” is defined as a smart device that, by design, does not require handheld manipulation for employment. Also encompassed in this definition are dermal, sub-dermal, and clothing-integrated computers that feature all the aforementioned capabilities of a smart device.

framing it in terms of the ancient Athenians' understanding of the "idiot," i.e., the person who comprehends no distinction between the public and private spheres:

We now have these technologies that simulate reality or create different realities in very sophisticated and interesting ways. Having these technologies available to us allows us to walk, say, through midtown Manhattan but actually to be inhabiting our private reality as we do so: We're on the phone or we're looking at our smartphone, gazing lovingly into our iPhones. And this is the way the world is going, there's no point complaining about it. But where my classics come in is I am amused by the fact our word idiot comes from the Greek word *idiotes*, which means a private person. It's from the word *idios*, which means private as opposed to public. So the Athenians, or the Greeks in general who had such a highly developed sense of the radical distinction between what went on in public and what went on in private, thought that a person that brought his private life into public spaces, who confused public and private was an *idiote*, was an idiot. Of course, now everybody does this. We are in a culture of idiots in the Greek sense.⁴

By this measure, the wearables of the future truly have the potential to turn us into a society of idiots. By 2030, a generation of Americans will have grown to adulthood never knowing a world without wearables, and this strongly suggests they will have grown to adulthood in a world without the clear demarcation between "public" and "private" as we currently understand the terms. Of note, they will also be the future recruits and officer candidates of the United States Marine Corps. If the Corps wishes to maintain effective command and control in this future, it must grapple with what such idiocy means to warfighting. In that regard, we must learn to weaponize idiocy.

The advent of wearable devices leads one to assume that, as their civilian popularity grows, so also will the military's use in employing them as tactical equipment.⁵ As wearables become information conduits that may be both monitored and monetized, we should carefully examine how they will be employed in an operational sense, especially with regard to their impact on command and control. Do we truly want decision making subject to seemingly limitless data feeds that wearables offer? If the advocacy for electronic transparency in domestic

law enforcement is any indication, this question may be moot.⁶ In fact, it may only be a matter of time before civilian authorities demand similar transparency of the soldier. Consequently, we must seek to understand digital distraction as well as the potential these devices possess to change the way we think and fight.

Digital Distraction and Attention Science

If we accept the basic premise that future devices will become ubiquitous and that such privacy will be manifestly reduced as a result, we must consider how our consumption of information affects our decision making as well as very ability to think critically. Both journalists and scientists have attended to this issue in recent years, leading to serious concerns regarding how digital technologies (particularly smart devices) affect our cognition.⁷ If, as some studies have indicated, data feeds and digital distractions negatively affect our ability to think critically, we are essentially engineering a society that can consume information at high rates of speed but cannot synthesize that information in the pursuit of higher goals.

In his landmark work, *A Deadly Wandering*, journalist Matt Richtel addresses this dilemma while crafting an exceptional overview of the current state of the neuroscience of human attention.⁸ His research summarizes and clarifies several key issues, but chief among them is the fact that the digital age is changing the way humans think. Featured heavily in Richtel's book is the work of Dr. David Greenfield, a clinical psychologist and director of the Center for Internet and Technology Addiction, who links such cognitive changes to the basic chemical processes that motivate human survival. Greenfield's research indicates that dopamine, the chemical substance that "rewards" our brain for behaviors that benefit our survival, is produced in massive quantities when we interact with digital devices, even more so when we share information over social networks. As Dr. Greenfield explains: "You see the computer, it's

one trigger, then you sit at the keyboard, it's another, you push the key, you get a result, then you get the big result. There's a cascade of dopamine. It's the big kahuna."⁹ Much like the dopamine response one might expect to receive from a slot machine, interaction with a smart device triggers a neurological "high" that encourages continual use, even if immediate material rewards seem minimal. Greenfield's understanding of the addictive nature of such technology is at once both intuitive and anecdotally resonant, but what is more curious is how this addictive cycle is related to distraction and privacy.

Researchers at Harvard University have similarly studied the effects of social media use on cognition and how it may relate to the "big kahuna" so lucidly described by David Greenfield. When placed in situations that require the sharing of personal information with others, experimental subjects report an overwhelming preference to be rewarded by personal information in return, even over significant monetary rewards.¹⁰ Magnetic Resonance Imaging (MRI) data has linked these preferences directly to increased dopamine levels. Thus, the researchers concluded that the "motivation to disclose our internal thoughts and knowledge to others may serve to sustain the behaviors that underlie the extreme sociality of our species."¹¹ Succinctly stated, the test subjects felt an overwhelming human need to share personal information and realized satisfaction through "connection." The Harvard studies provide strong evidence that human dopamine levels are enhanced through our ability to disclose private thoughts to other individuals. While it is fascinating to consider the notion that sharing information can provide a chemical "high" to the human brain, it is more sobering to consider how this process unfolds when coupled to the interconnectivity of a smart device.

In 2012, neuroscientists at the University of Kansas examined this very issue. In a series of experiments they issued test subjects a smart device, placed them in a driving simulator, and

engaged in text message conversations with them while driving. At the end of the test the participants consistently failed to recall information regarding the route they were following or the buildings they passed, though they could recall with vivid accuracy the personal details of, say, a party that was discussed or the opinions of the person texting them.¹² Dr. Greenfield's additional research links this result to not only the cognitive rewards of sharing information but also the stimulus-response effect from using smart devices themselves. In essence, the Harvard study demonstrates that smart devices provide not only a constant ability to receive and share information, but also that users may experience uninterrupted elevation of dopamine levels. Greenfield refers to the persons raised on such devices as "Generation D," stating: "They're so amped up on dopamine that when it's not firing, they feel dull, dead.... They have no threshold for attentional capacity."¹³

A synthesis of the above is that, while it is clear that information sharing provides a positive neurological response, smart device use also can become swiftly addictive. Such addiction has undoubted negative effects on human attention, and by that fact the ability to think critically.¹⁴ In short, we may be the rise of a generation of digitally distracted, privacy-ambivalent dopamine addicts who possess a reduced capability to think critically. This same population will constitute the future warfighters upon which the Marine Corps will rely. This fact should be of enormous concern to the Marine Corps and the nation.

Command and Control: Revisiting Doctrinal Foundations

Marine Corps Doctrinal Publication (MCDP) 6 provides a useful description of command and control (C2) that must be examined further if we are to overcome the future challenges of digital "idiocy." According to doctrine, C2 is "the means by which a commander recognizes what needs to be done and sees to it that appropriate actions are taken."¹⁵ This definition focuses

on the commander, the principal decision maker in a given situation. It also frames command and control in terms of action, but not necessarily action on the part of the commander. With this in mind:

Command and control is something we *do*. These activities include, but are not limited to, gathering and analyzing information, making decisions, organizing resources, planning, communicating instructions and other information, coordinating, monitoring results, and supervising execution.¹⁶

This amplification of C2 serves to integrate information gathering and decision making as parts of a process, one that involves the warfighter's ability to gather and "actualize" information. In a sense, it is a reframing of Air Force Colonel John Boyd's rightly famous "OODA Loop."¹⁷ While the seemingly lock-step circularity of such descriptions are attractive, a more relational perspective is more useful if we hope to address what wearables will mean to both leaders and led.

Quite conveniently, MCDP 6 begins with a rather whimsical yet relevant short story set "sometime in the near future," of a Marine combat unit in the thick of a fight while employing (relatively) advanced digital technologies not unlike the wearables that have been discussed so far. The Marines in the vignette represent what one might expect to find in any organization as it seeks to integrate new systems with old ideas. More importantly, perhaps, the story depicts a fundamental relationship between information gathering and decision making. Lacking effective ways to gather, process, and distribute information, we cannot hope to make timely or even rational decisions. Such a relational understanding portends that C2 is quite simply *the information processes that inform a warfighter's authority to make decisions*.

Distraction, Privacy, and Authority

The relationship between wearables, digital distraction, and privacy have already been discussed, but how do they interact with command and control as defined? Very simply, as an information process that informs decision making, command and control will be increasingly affected by all three factors in the future. As societal acceptance of wearables increases, surely they will be accepted for military use, that is, “militarized” in at least the most basic sense.¹⁸ Attention science has already demonstrated the effects associated with protracted use of these devices.¹⁹ We are left, then, not simply to figure out whether or not wearables are coming; they are already here.²⁰ Nor do we need to imagine how wearables will affect our behavioral patterns and systems of thought; modern neuroscience has already provided us a concrete understanding of this.²¹ What is left for us to explore now is what methods of command and control will not only be effective in light of these developments, but also what will be necessary to fully exploit them.

If we accept the strong likelihood that wearables will be a standard part of the Marine’s “kit bag” by the year 2030, we must also accept that they will be employed by Marines who will be cognitively predisposed to their use and already “addicted” to the dopamine effects that their employment presents. Unfortunately, this also may mean that these Marines have already experienced a decline in cognitive skills and possess an attention span that adversely affects critical thinking. Militarized wearables would therefore be well suited to these users but these selfsame users may also carry a predisposition that constitutes an obstacle to creative and critical thought. Thus, the promise and pitfalls represent a fork in the road insofar as wearable technology is concerned.

Access, Authority, and Delegation

The first path is one that directly associates *access* with *authority*, and a system that posits commanders as the central point of focus for the employment of wearable technology. In taking this route, we need make no preparations for the arrival of wearables other than clearing space in wall lockers and armories, assuming that the Marines of 2030 will have already embraced information sharing and reduced privacy. Such a future may prove tantalizing for what MCDP 6 would call the *authoritarian* leadership philosophy, which holds that individuals desire little more than direction and control. They will, if given the opportunity, avoid additional effort whenever possible. Such a C2 philosophy can be implemented by a suite of technologies that allow warfighters to “act” on the battlefield while commanders use wearables to “see” and “hear” through their eyes and ears to make decisions for them..

Ironically, the above scenario is at odds with the Marine Corps ethos, which emphasizes initiative by subordinates and a bias for action. That said, an authoritarian leadership construct with wearable technology is easy to imagine. James Cameron’s 1986 film, “Aliens,” handily illustrates this point in dramatic fashion. Directing his troops from the relative safety of an armored troop carrier, a colonial Marine Lieutenant in the film becomes overwhelmed by data feeds transmitted from his platoon’s wearables. The directing authority cognitively crippled, chaos ensues and discipline collapses: Marines withdraw, lose weapons discipline, and ignore their rules of engagement. While this example is one of pure Hollywood science fiction, it also is one of cautionary value. The employment of wearables, including the integration of live streaming audio, video, and even biometric data from Marines of the ground, could allow commanders to see and specifically direct (in real time) what troops are doing on the battlefield

(or even in barracks spaces) half a world away. Such unrestricted access might even appear nonintrusive to a privacy-ambivalent “Generation D.”

Another path, one that may provide the greater challenge but also the greater opportunity, is the one in which we leverage wearables with a leadership philosophy based on *delegation*, that is, *persuasive leadership* rather than authority. This approach presupposes that “people will exercise initiative and self-control to the degree they are committed to the organizational objective. Under proper conditions, people learn not only to accept responsibility but to actively seek it.”²² The command and control challenge here lies in a commander’s ability to acquire and process the “right” information and then share this information with subordinates through. This philosophy involves not only a high degree of trust between leaders and subordinates but also implies a degree of training and education for both that permits the full exploitation of the technology in the context of persuasive leadership. As such, leadership by delegation may present the ability to not only “weaponize” wearables but also the Marines who will be wearing them. Through delegation commanders can rely on subordinate leaders to “filter” data feeds based on rank, billet, or geographic location. This would be a novel but perhaps necessary burden to place on the shoulders of junior leaders. Nevertheless, the benefits to the Marine Corps and the nation would be immense.

The seeming dichotomy between the authoritarian and persuasive leadership styles is not simply a matter of philosophy. In terms of the employment of wearables on the battlefield, the distinction constitutes a moral challenge that may redefine the Marine Corps as an institution. An authoritarian approach would require a synthesis of a host of disparate and unrestricted data feeds, posing a potential cognitive overload for decision makers. Yet, at the same time, the ability to “direct” individuals on the battlefield is attractive to the authoritarian minded. On the

other hand, a persuasive approach would leverage the potential decision making ability of the individual Marine.

Conclusion and Recommendations

Recalling that C2 consists of information processes that inform a warfighter's authority to make decisions, we may further observe that command and control is a system of reciprocal influences that allow a commander to perceive the operating environment.²³ This awareness is the key to good judgment and decision making. Command and control systems, be they wearables or tin cans and string, exist to facilitate understanding at all levels of command.²⁴ Thus, the dichotomy of the fork in the road may in fact be a false dilemma. As wearables become more omnipresent, information sharing will be a fact. The question is, how will such information sharing be harnessed? We have already entered an age when life and death decisions rely on information as much as technical and tactical proficiency. This will only become clearer as wearables begin to saturate the battlefield.

Currently, the Marine Corps approach to information management remains vague. Doctrinally, information management should "facilitate the rapid, distributed, and unconstrained flow of information *in all directions*" [emphasis added]. According to MCDP 6, commanders are to "pull from the base only the information they need." They are to avoid information overload and yet at the same time encouraged to employ "directed telescopes" at their discretion and across subordinate levels of command. As the Marine Corps adopts wearable technology, it should therefore reevaluate and re-draft MCDP 6. This is not to say MCDP 6 should become a technical manual for the use of digital systems, but the time has come to more clearly illustrate the cognitive effects such technologies introduce into military decision making.

Part of the reevaluation will require redefining command and control and giving C2 a more prominent place in Marine Corps training. If it can be accepted that authoritarian leadership may be ill-suited to a wearable-equipped force and leadership by delegation and persuasion may be well-suited to it, then command and control theory must be precisely defined and taught to leadership at all levels. Likewise, a renewed emphasis must be placed on the value of leadership by delegation in an age of wearables. Rather than every Marine being merely the commander's window to the battlefield, we must provide individual Marines with the an understanding of the strengths and limitations of their own decision making.

While this essay has proffered that a review of MCDP 6 will be necessary if wearables are to be positively embraced, such a review does not imply that the future holds only negative possibilities. The opposite is true. More precisely, this is not a Marine Corps Systems Command problem, it is a Marine Corps problem. Currently, The Marine Corps tends to take the organizational view that new communications technologies and technical systems require technical *training* rather than *education*.^{iii*} In the case of wearables, this is a recipe for failure. Without providing an educational foundation to use such technologies, we risk becoming an over-centralized, authoritarian organization that discourages individual initiative- something at odds with the Marine Corps philosophy of maneuver warfare.

Instead, the Marine Corps must develop, at the very least, a suite of educational directives and curricula that address the potential shortfalls of wearable technology in an age of idiocy and at the same time point to the promise of wearable technology. Foundational programs must include critical thinking and leadership training that contextualizes the use of wearable technology. No drastic changes would be necessary for these programs to take shape; they could

* Training might best be defined as deliberate preparation for expected professional tasks; education might be defined as deliberate preparation for professional tasks that are unforeseen.

be effectively integrated into the curriculum of Marine Corps professional military education courses from the NCO level to the war college.

By 2030, civilian and military use of wearables will be the norm rather than the exception. In the intervening years, the Marine Corps must begin developing not only training for wearables as a new type of equipment but also educational programs that address the critical cognitive shortfalls an over-reliance on wearables may impose on the total force. The only obstacle to this goal is institutional apathy, if not institutional resistance. It is likely that the Marine Corps will spend millions if not hundreds of millions of dollars equipping itself with wearable smart devices as their acceptance in civilian society necessitates their “weaponization” for military use. A significant portion of such expenditures should be dedicated to education programs and the consequent improvement of the most important warfighting system in the Marine Corps inventory – the individual Marine.

Endnotes:

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- ² Philippa Strum. *Privacy: The Debate in the United States Since 1945*. Orlando, Florida: Harcourt Brace & Company, 1998.
- ³ Drew Harwell. "The Body-Camera Industry is Feeling Phenomenal After Ferguson." *The Washington Post*, December 3, 2014.
- ⁴ Curtis Fox. "Out Loud: Dear Miss Renault." *The New Yorker*, accessed 12/19, December 30, <http://www.newyorker.com/culture/culture-desk/out-loud-dear-miss-renault>
- ⁵ John Breeden, II. "Are wearable PCs for the field in sight?" *GCN*, accessed 12/19, 2014, <http://gcn.com/articles/2012/10/31/are-wearable-pcs-for-the-field-in-sight.aspx>
- ⁶ Randall Stross. "Wearing a Badge, and a Video Camera." *The New York Times* (April 6, 2013).
- ⁷ Matt Richtel. *A Deadly Wandering: A Tale of Tragedy and Redemption in the Age of Attention*. 1st ed. New York: HarperCollins Publishers, 2014.
- ⁸ Matt Richtel. *A Deadly Wandering: A Tale of Tragedy and Redemption in the Age of Attention*. 1st ed. New York: HarperCollins Publishers, 2014.
- ⁹ *Ibid.* 196
- ¹⁰ D.I. Tamir and J.P. Mitchell. 2012. "Disclosing information about the self is intrinsically Rewarding." *Proceedings of the National Academy of Sciences*, 109(21), 8038-8043.
- ¹¹ *Ibid.* 170
- ¹² *Ibid.* 168-169
- ¹³ *Ibid.* 217-218
- ¹⁴ *Ibid.*
- ¹⁵ United States. Command and Control. MCDP. Vol. 6. Washington, DC: Headquarters, U.S. Marine Corps, 1996. <https://archive.org/details/commandcontrolus00usma>.
- ¹⁶ *Ibid.* Page 52
- ¹⁷ *Ibid.*
- ¹⁸ Felix Salmon. "How Technology Redefines Norms." *Reuters*, accessed 12/19, 2014, <http://blogs.reuters.com/felix-salmon/2013/05/18/how-technology-redefines-norms/>.
- ¹⁹ Matt Richtel. *A Deadly Wandering: A Tale of Tragedy and Redemption in the Age of Attention*. 1st ed. New York: HarperCollins Publishers, 2014.
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- ²¹ Matt Richtel. *A Deadly Wandering: A Tale of Tragedy and Redemption in the Age of Attention*. 1st ed. New York: HarperCollins Publishers, 2014.
- ²² United States. Command and Control. MCDP. Vol. 6. Washington, DC: Headquarters, U.S. Marine Corps, 1996. <https://archive.org/details/commandcontrolus00usma>.
- ²³ *Ibid*
- ²⁴ *Ibid.*

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