REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
05/28/2019	Master of Operational Studies	JUN 2018 - JUN 2019

4. TITLE AND SUBTITLE
The Marine Corps and Future War in the Cognitive Domain:
A Concept for the Future of Combined Arms

5a. CONTRACT NUMBER
N/A

5b. GRANT NUMBER
N/A

5c. PROGRAM ELEMENT NUMBER
N/A

6. AUTHOR(S)
Nash, Charles, C, Major, USMC

5d. PROJECT NUMBER
N/A

5e. TASK NUMBER
N/A

5f. WORK UNIT NUMBER
N/A

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
USMC School of Advanced Warfighting
Marine Corps University
2044South Street
Quantico, VA 22134

8. PERFORMING ORGANIZATION REPORT NUMBER
N/A

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)
Dr. Gordon Rudd

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
N/A

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT
"Marines must understand that controlling physical terrain is no longer a sufficient condition for battlefield success." An opportunity therefore exists for the Marine Corps to remain successful and relevant - to understand and incorporate operations within the cognitive domain to achieve the concepts set forth in the Marine Corps Operational Concept. Understanding Operations in the Information Environment (OIE) offers the Marine Corps an opportunity to exploit existing means and emerging technology against the most basic element of conflict - human will. The MOC calls for a "broader concept of combined arms/information warfare;" this is the inclusion of indirect fire - direct fire - cognitive effects.

15. SUBJECT TERMS
Combined Arms, Future combined arms; cognitive domain, cognitive effects; MOC, Marine Operating Concept; OODA, OODA Loop; future war; USMC, Marine Corps; MCU, Marine Corps University; SAW, School of Advanced Warfighting; deception

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			USMC School of Advanced Warfighting
					19b. TELEPHONE NUMBER *(Include area code)*
Unclass	Unclass	Unclass	UU	42	(703) 432-5420 (Admin Office)

United States Marine Corps
School of Advanced Warfighting
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, VA 22134

FUTURE WAR PAPER

The Marine Corps and Future War in the Cognitive Domain

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

Major Charles C. Nash, USMC

AY 2018-19

Mentor: **Dr. Gordon Rudd**

Approved: _____

Date: 14 MAY 2019

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE SCHOOL OF ADVANCED WARFIGHTING OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

The year is 2035. In support of a Battalion Landing Team operation to seize an airfield near the coast for use as a forward armament and refueling point and eventual Expeditionary Advanced Base, the "boat company" prepares for an amphibious assault. The company commander identified an enemy tactical center of gravity as its heavy crew-served weapons, as they provide his most lethal means to deny the Marines access to the beaches. Applying a combination of precision munitions against communications nodes and indirect fires against crew-served weapons will mitigate the risk to the landing force as it hits the beach. Continued aviation fires and the immediate employment of an 81mm mortar section upon securing the beachhead allows the company to occupy a machine gun position, now preparing for an echelon of combined arms from the 81mm mortars to 60mm mortars to its M240B 7.62mm machine guns. Not to ignore shaping efforts executed at higher echelons, today, the main effort successfully closes to the objective after placing the enemy in a traditional combined arms dilemma. Though refinements will continue to be made, Marine battalions train to and execute this basic template for a small-scale amphibious assaults since their first successful employment during forcible entry operations in the early 2020s.

In support of a subsequent landing on an adjacent beach, one platoon is additionally tasked with the destruction of two nearby crew served weapons positions. The platoon commander stealthily occupies an observation post with her Joint Fires Observer (JFO). On a hill to her left flank, the platoon deception team (PDT) rapidly installs its newly fielded Battlespace Influence Kit (BIK). To her right flank, an attached squad of medium machine guns occupies its assault position behind the hill that will eventually become its support by fire position. Beyond them, the rest of the platoon is set in its final assault position. All stations report to the platoon commander, "actual," that they are in position for the assault. She nods to

the JFO, who begins his call-for-fire sequence with the company 60mm mortar section. After two adjusting rounds, he begins to get limited effects on the enemy positions. He confers with the platoon commander and sets a timeline for suppression, initiating the platoon's Effects Support Plan (ESP). Two minutes later, as prescribed in the platoon order, the PDT commences its actions as part of the ESP. For this mission, its specific actions include the representation of a medium machine gun section (via 195 dB direction-specific auditory simulation) firing at the rapid rate for thirty seconds and then the sustained rate for six minutes. To augment the audible effects, the PDT also provides low-rate automatic fires from its Infantry Automatic Rifles to ensure the enemy experiences some actual suppressive effects from the PDT's position. As a result, the enemy leadership re-oriented one crew-served weapon toward the PDT and returned fire from a third, previously unidentified, weapon system.

Under the combined effects of the 60mm mortars and the PDT, the actual *medium machine gun squad is able to occupy its support by fire position undetected. Additionally, the machine gun squad is using the new Machine Gun Suppressor, which effectively masks the guns' attributes and reduces its audible distance to 300 meters. With three crew-served weapons now identified, the machine gun squad leader commenced fire at the rapid rate after four minutes of effects from the PDT (per the platoon commander's ESP). With the actual guns firing from 750 meters away from the objective, the enemy descends into utter chaos once the machine guns achieve effective plunging fire into the reinforced position. With effective suppression from the 60mm mortars and the medium machine gun squad, the platoon successfully closes with and destroys three enemy crew served weapons.*

Introduction

The 2015 Marine Corps Intelligence Activity (MCIA) assessment, *Future Operating Environment (FOE) 2015-2025: Implications for Marines*, identified five key drivers of change in the future security environment. The five key drivers are: complex terrain, technology proliferation, information as a weapon, battle of signatures, and the increasingly contested maritime domain.[1] Application of these five key drivers from the FOE served as a driving force behind the 2016 *Marine Corps Operating Concept* (MOC), which "describes, in broad terms, how Marine Corps forces will conduct the range of military operations in accordance with [its] Title 10 responsibilities."[2] The MOC notes that in the third driver of change, information as a weapon, that "Marines must understand that controlling physical terrain is no longer a sufficient condition for battlefield success."[3] An opportunity therefore exists for the Marine Corps to remain successful and relevant – to understand and incorporate operations within the cognitive domain to achieve the concepts set forth in the Marine Corps Operational Concept.

Framing the Problem

Conflict in the cognitive domain is not a new concept. As Sun Tzu stated more than 2500 years ago, "To subdue the enemy without fighting is the acme of skill. Hence to fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting."[4] This succinct reflection on the concept of winning in the mind remains true today and can be viewed as foundational to the future of warfare. When considered at the tactical level, however, the concept of winning without fighting may be a bit

lofty. Yet, the concept is sound – even in a tactical fight, the victor possesses the ability to influence the opposition. The second key driver of change, technology proliferation, in conjunction with the technology and cyber boom of the 1990s and 2000s, effectively connected the world in ways previously unimagined. Their combined effect on the battlespace is no different.

Fundamentally, understanding Operations in the Information Environment (OIE) offers the Marine Corps an opportunity to exploit existing means and emerging technology against the most basic element of conflict – human will. Its application cannot solely reside at the operational headquarters level. It requires a universally applied and understood language, with environmentally-specific nomenclature. It lends itself to maneuver warfare with the possibility of a cognitive combined arms effect. The Marine Corps has the potential to lead in the cognitive exploitation to win future battles. However, as the MOC states, "The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures, and an increasingly non-permissive maritime domain."[5] Continuing, the Marine Corps should be "organized, trained, and equipped [at] all echelons to integrate information warfare as a combination of creative thinking and advanced technology – because conducting information warfare is what we all do, every day."[6] Finally, the MOC calls for a "broader concept of combined arms/information warfare"[7] – but how?

Evolution of the Battlespace

The first step of Intelligence Preparation of the Battlespace is to define the battlefield environment. Doing so implies understanding the environment; however, the 21st Century

battlespace continues to evolve. In late 2014, Secretary of Defense Chuck Hagel issued a memorandum that announced the Defense Innovation Initiative as a "Department-wide initiative to pursue innovative ways to sustain and advance our military superiority for the 21st Century and improve business operations throughout the Department."[8] He directed that the DOD "will identify a third offset strategy that puts the competitive advantage firmly in the hands of American power projection over the coming decades."[9] Hagel's model aimed to build upon the second offset strategy, which sought technological superiority (such as with precision strike; stealth; and improved intelligence, surveillance, and reconnaissance) to maintain an advantage against numerically superior adversaries. Hagel's vision includes the maintenance of an advantage through technology and efficiency to defeat adversaries who might take advantage of the United States' years of conflict in Iraq and Afghanistan to modernize and "proliferat[e] disruptive capabilities across the spectrum of conflict."[10]

The current version of Joint Publication 3-0, *Joint Operations,* includes in its Change 1, dated October 22, 2018, two significant revisions relating to the evolution of modern and future warfare. First, it includes information as the seventh joint function and revises the language describing the information environment. It also replaces "Joint operations across the range of military operations" with "Joint operations across the conflict continuum" to more accurately describe the evolving elements of sub-conflict competition. Further, the May 2018 Joint Doctrine Planning Conference proposed a Joint Doctrine Note for publishing in early 2019, *The Competition Continuum.* This note will provide a doctrinal foundation for the competition continuum as a replacement to the range of military operations. It will specifically identify and address competition below armed conflict, within which the information and cognitive elements

naturally reside. As the cooperation and competition continuum expands to the "left" of conflict and war, the modern force must continue to explore alternatives to conventional warfare.

Meanwhile, the Marine Corps continues to press forward with its own doctrinal development regarding information, cyber, and the cognitive aspects of war. The Marine Corps' approval of information as the seventh warfighting function on January 18, 2019, more than a year after the first indication that joint doctrine would reflect the same, provides a firm example of this independence. This may result in doctrinal fratricide that should require future review, nesting, and deconfliction. The natural momentum toward competition below armed conflict results in a modern force needing effective alternatives to armed conflict; the information environment and cognitive domain/dimension provide exactly that.

Threat vs. a Fleeting Opportunity

Contemporary state and non-state adversaries such as China, Russia, and at one time, Daesh, continue to demonstrate a comprehensive understanding and application of cognitive "warfare." Per the MOC, "Today's adversaries already leverage every type of information as an arm of both "hard" and "soft" power to mask their actions, mislead unwitting publics, and undermine the legitimacy of their opponents."[11] Additionally, in the gap between soft power (political influence and attraction) and hard power (military might), some foreign policy scholars identified a potential third type of power, "sharp power." Sharp power "typically stems from ideologies that privilege state power over individual liberty and are fundamentally hostile to open debate and independent thought."[12] Specifically, after China, Russia is the second most active state exploiting offensive cyberspace activities.[13] Secretary of Defense Mattis acknowledged the critical importance of this environment: "The advent of the internet, the

expansion of information technology, the widespread availability of wireless communications, and the far-reaching impact of social media have dramatically impacted operations and changed the character of modern warfare."[14] At the present, Operations in the Information Environment and the achievement of cognitive effects in competition below armed conflict provide an opportunity for the Marine Corps and the United States to gain an advantage at all levels of warfare. However, as peer adversaries and other states or actors seize this opportunity, the momentary advantage quickly fades instead to a liability.

The emergence of information as a catalyst in the evolution of the Department of Defense brings unique challenges. An inherent problem with most new concepts terminology. However, the MOC clearly states the Marine Corps' emergent operating concept as "Maneuver Warfare in Every Dimension, Combined Arms in All Domains."[15] Expanding, the MOC notes that combined arms traditionally existed in the air, land, and sea domains, while maneuver occurred primarily within the physical dimension. However, the modern operating environment requires a focus on combined arms in space and cyberspace and maneuver within the cognitive dimension.[16] The MOC further identifies information as a domain,[17] and it includes the following confusing elements: mention of physical as a domain,[18] mention of social as a domain,[19] and multiple references to human dimension. Within a single document, written by and for a single service, information and cognitive aspects of warfare remain mislabeled. This friction is replicated across the other services and at the joint force level.

Identifying this challenge, the Marine Corps sought to achieve early clarity and consistency. In an effort to introduce "a comprehensive approach to fighting and winning in the and through the information environment,"[20] Lieutenant General Robert S. Wash, Deputy Commandant, Combat Development and Integration, released the *Marine Air Ground Task*

Force Information Environment Operations Concept of Employment in July, 2017. This document defined information as an environment, establishing it as maneuver space independent of the five doctrinally accepted domains.[21] It further evolved Information Operations into Information Environment Operations and provided a baseline reference for the introduction and employment of the Marine Corps' new Marine Expeditionary Force (MEF) Information Group (MIG), an emergent concept of consolidating information-related functional elements of the MAGTF under a single headquarters subordinate to the MEF. However, Operations in the Information Environment (OIE) already supplanted Information Environment Operations, further highlighting the rapidly evolving and reactive nature of this emergent concept.[22] If the Marine Corps and joint force fail to rapidly organize, synchronize, and operationalize, this potential opportunity quickly becomes a threat as national adversaries continue to gain momentum.

Continuing this logic, the *MAGTF IEO Concept of Employment* defines MAGTF IE Operations as "the integrated planning and employment of MAGTF, Naval, Joint, and Interagency information capabilities, resources, and activities that enhance the Marine Corps single-battle concept and provide defensive, offensive, exploitative effects and support in order to operate, fight, and win in and through a contested information environment."[23] In July 2018, the Deputy Commandant for Information, Lieutenant General Loretta E. Reynolds, defined the information environment as "the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information."[24]

The Way Ahead

As previously established, the Joint Force, and subsequently the Marine Corps, clearly identify Operations in the Information Environment as important. However, each struggles to

define and establish structure for the information environment and cognitive effects therein. While the Joint Staff views the situation through a particular lens and is revising its doctrine accordingly, the Marine Corps is doing the same – albeit through a slightly different lens. As the Marine Corps develops its information theories and doctrine to support MAGTF and joint operations, it must do so in a manner that stimulates growth as a service. This growth should assist the Marine Corps to stay relevant as an expeditionary force in readiness. Moreover, the Marine Corps' emergent information-oriented doctrine should enhance its maneuver warfare doctrine by increasing the incorporation of psychological and cognitive effects – ultimately enhancing maneuver and increasing effectiveness and lethality at all levels.

The Marine Corps must develop and expand its capability beyond simply countering existing adversary models. The MOC provides an initial framework within which to do so, calling for the Corps to be organized, trained, and equipped at all echelons to integrate information warfare as a combination of creative thinking and advanced technology.[25] Moreover, the MOC calls for a "broader concept of combined arms/information warfare."[26] The MAGTF Information Environment Operations *Concept of Employment* provides a starting point for some of these requirements, but the Marine Corps has an opportunity to accelerate its seizing of the information initiative.

Organize the force to meet the demands of the future OE. Perhaps the most significant conceptual change the Marine Corps recently implemented is the establishment of the MIG. Its two-fold mission outlines that it should "[c]oordinate, integrate, and employ IE Ops capabilities in order to ensure the MAGTF Commander's ability to facilitate friendly forces maneuver and deny the enemy freedom of action in the information environment. Provide communications, intelligence, supporting arms liaison, and law enforcement capabilities in support of MAGTF

operations."[27] While the command structure reflects drastic similarities to the legacy "MEF Headquarters Group," its OIE-focused mission marks a more integrated structure as a functional part of the MAGTF headquarters. The MIG no longer serves as the MEF's administrative "Headquarters and Service" unit, but rather as the "MEF's lead for planning, integrating, coordinating, and supporting IE Ops across the MAGTF . . . facilitating a whole-of-MAGTF approach."[28]

To create opportunities for successful application at the lowest levels, consider the vignette example of the Platoon Deception Team (PDT). Though the vignette does not propose a table of organization change within the rifle platoon, it provides an example of an opportunity. Platoons task organize for detainee handling, site exploitation, litter bearing, assault / support / security, flank security / rear guard, etc., so the addition of a deception element as a standing task organized element would work. In addition to a future capability, it provides a forcing function to plan and account for deception at the lowest level.

Train the force to meet the demands of the future OE. Per the MAGTF IE Operations *Concept of Employment*, the MIG receives this as a specified task: "Organize and provide trained IE Ops forces and capabilities to MEF MSC, MEB, MEU, and SPMAGTF CEs for operational employment; Support MEB, MEU, and SPMAGTF training and pre-deployment requirements."[29] The MIG is further tasked to execute the functions of MAGTF IEO/OIE:

-Assure Enterprise C2 & Critical Systems
-Provide IE Battlespace Awareness
-Attack & Exploit Networks, Systems, and Information
-Inform Domestic & International Audiences
-Influence Foreign Target Audiences
-Deceive Foreign Target Audiences
-Control IW Capabilities, Resources, & Activities[30]

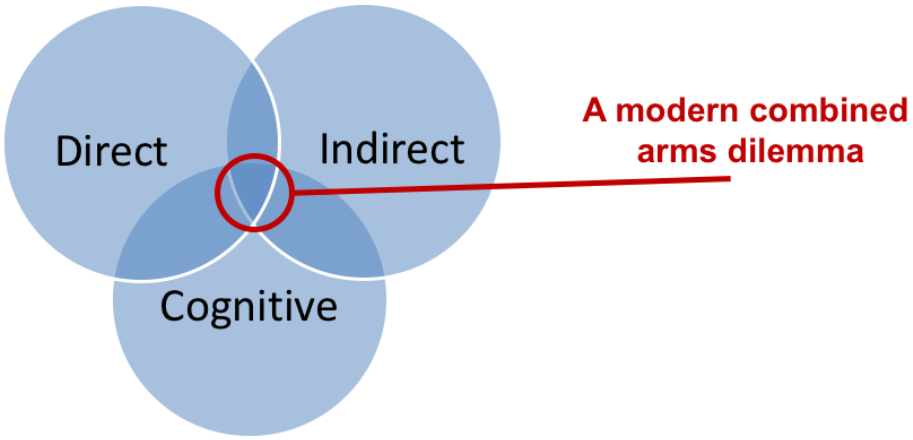
In the execution of these functions, an implied task would be the testing and evaluation of new equipment. While the concept reflects the integration of several existing systems, it also captures further system development and linkage under "MARFOR Challenges and Limitations." This further highlights the technical, network-focused approach to cognitive effects rather than a lower-echelon, user-friendly model.

Integrate information warfare, or OIE, at all echelons. To achieve this, the Marine Corps must respond to an additional requirement of the MOC: *Implement and execute a broader concept of combined arms/information warfare*. MCDP 1, *Warfighting*, defines combined arms as "the full of arms in such a way that to counteract one, the enemy must become vulnerable to another. We pose the enemy not just with a problem, but with a dilemma – a no-win situation."[31] At the most basic level, an infantry fire team achieves a combined arms dilemma through the use of indirect (M203 40mm grenade launcher) and direct (M27 Infantry Automatic Rifle, M4 rifle) fire. If the enemy seeks cover from direct fire, he remains vulnerable to the indirect fire attack. If he attempts to move away from the indirect fire, he becomes exposed to the direct fire weapon systems. Maneuver warfare applies this concept at all levels, incorporating the entire power of the MAGTF, both kinetic and non-kinetic to achieve effects in all domains. Operations in the information environment should be no different.

However, when the MOC attempts to frame combined arms in conjunction with information warfare, the result is a "portfolio" that includes the directed integration of ten methods: military information support operations (MISO); military deception (MILDEC); operations security (OPSEC); electronic warfare (EW); physical attack; special technical operations (STO); information assurance (IA); computer network operations (CNO); public affairs (PA); and civil-military operations (CMO). This model fails to integrate OIE at all

echelons or levels, as the lowest level of command that includes these functions organically is the MEF. Further, the MOC proceeds to list 14 "musts" requisite to enhance the Corps' ability to conduct OIE – not conducive to lower echelons.

Instead, at the risk of over-simplification, the future combined arms concept of the MAGTF, at any echelon, should begin with these three effects: *direct, indirect, cognitive*. To achieve effects in the cognitive, a fire team does not need to employ 10 methods and/or accomplish 14 tasks; it must simply force the adversary to make a decision among undesirable alternatives while affecting the adversary's decision-making cycle. It must *influence* the enemy's decision-making process in a way that deceives. Cognitive effects at the tactical level are borne of simple deception. Again, in over-simplified form, consider the rifle-grenade launcher scenario. In this kinetic, tactical situation at the lowest level, the fire team leader could employ 40mm high explosive to create the traditional combined arms dilemma. He could further employ 40mm smoke to the enemy's flank or rear to deceive regarding the direction of attack. While electronic and cyber elements of OIE are certainly important, to truly begin influencing the Marine Corps culture into one of future combined arms, the solutions and examples must be simple, understandable, and applicable.



Expanding on the very basic fire team example above, the opening vignette paints a clear picture of a future scenario in which not-yet-fielded technology provides a small unit an enhanced ability to achieve tactical deception. The platoon commander, at her level, is able to achieve cognitive effects through the application of one item of technology, an updated "effects support plan," and basic infantry fundamentals. She learned this as a "normal" practice since her time at The Basic School, because integration of deception and cognitive effects became routine for her generation of leaders.

Young Marines and newly-commissioned officers are all familiar with phrases such as "shoot, move, and communicate," "suppress, assess, move, kill," "combined arms dilemma," and many other bumper sticker-sounding clichés that Marines actually apply in training and combat. These phrases ultimately emerge from existing doctrinal concepts. MCDP-1 *Warfighting* and MCDP 1-3 *Tactics* both include references to combined arms and the desirable "dilemma" achieved through combined arms. Both publications also provide detailed examples of both small unit attainment of combined arms dilemmas as well as larger, Marine Air-Ground Task Force-integrated examples of achieving a combined arms dilemma against an adversary. On the next update cycle for these publications, the refinement of combined arms to include cognitive effects through deception as an element to achieving the dilemma would anchor the concept and provide a reference point for schools and training to use. Instead of describing the polar "If, then" of two-option scenarios for the enemy, doctrine must illustrate that with the inclusion of deception, it is "If, then, because." The enemy recognizes the dilemma imposed by simultaneous direct and indirect fires. However, in the case of the vignette, the enemy decides to redistribute assets (orientation of one medium machine gun) *because* of the deceptive effects achieved by the

PDT. The third leg of this broader concept of combined arms incorporates information, in the form of a cognitive effect, at the lowest levels.

Expanding this idea answers the MOC's specified task to "[i]ntegrate a 21st Century combined arms approach into our education, training, exercises, and organizations."[32] First, the 21st Century combined arms approach must be formalized: direct, indirect, cognitive. In the future fight, true combined arms comes with the achievement of direct and indirect physical effects, and some form of a cognitive effect against the enemy. When planning for an operation, just as a leader would overlay enemy threat rings and friendly weapon ranges to identify opportunities, the same logic must be applied in the cognitive dimension to achieve effects against an adversary's decision-making process.

During problem framing, mission analysis, or while developing an estimate of the situation, a leader should ask him/herself three questions to identify cognitive opportunities: *What decision points will the enemy face? What decision is most advantageous to me? What decision is most advantageous to the enemy?* Once these questions are answered, the leader or planner then considers how to influence the enemy: *What does the enemy currently believe? What do I want the enemy to believe? How do I achieve this?* In the case of the vignette, the platoon commander's thoughts may have tracked along the following logic:

What decision points will the enemy face? *When should he engage? Where should he engage? What weapon systems will engage first? What is the adversary (friendly force) most likely course of action?*

What decision is most advantageous to me? *The adversary will attack from [incorrect direction].*

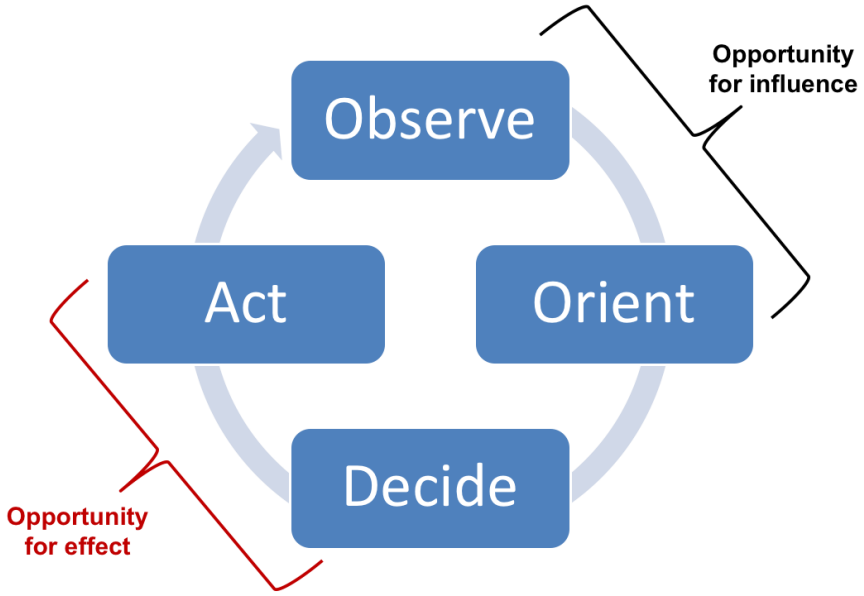
What decision is most advantageous to the enemy? *The adversary's most likely course of action is to occupy a support by fire position [correct location] and maneuver from [correct location].*

Then, the next three items in analysis:

What does the enemy currently believe? *That the most likely support by fire position is [key terrain].*

What do I want the enemy to believe? *That my machine guns are firing on the enemy from [key terrain].*

How do I achieve this? *Employment of the PDT to [key terrain], thereby allowing my actual machine guns to occupy a different support by fire position undetected.*



Specifically, when considering John Boyd's OODA Loop, influencing the enemy's decision-making process is most likely to be achieved indirectly. What this means is that the actual decision isn't affected; rather, what the enemy observes, or how the enemy orients, is influenced (see above figure). This alters the environment, or the enemy's perception of the environment, and allows him to confidently decide based on incorrect information. To achieve an effect in the D and therefore the A, one must influence the OO.

MCDP-1, *Warfighting*, addresses the identification of a subordinate Main Effort as the unit assigned the responsibility for accomplishing "the [action] most critical to success at that moment."[33] While not specified in *Warfighting*, those subordinate elements conducting complementary actions while not serving as the Main Effort become designated as Supporting Efforts. For example, a squad conducting an assault might be the platoon's Main Effort while

the other squads, perhaps isolating or suppressing, might be designated as Supporting Effort 1 and Supporting Effort 2. Integration of modern combined arms, including a cognitive effect, should be viewed at the same level of importance. The subordinate unit conducting a deceptive action should be designated as the Deceptive Effort. In the case of the vignette, the platoon commander might designate her units as such: ME: 1st squad (assault), SE1: 2nd squad and machine guns (support), SE2: 3rd squad (security), DE: PDT. To fully integrate information at all echelons, simple practices such as designating a unit as a Deceptive Effort vice a Supporting Effort serve to reinforce the importance of OIE and achieving cognitive effects with the new combined arms model.

Conclusion

As the Marine Corps enters the 2020s and 2030s, it must lead, or at least keep pace with, the Department of Defense with innovation and emergent application of combined arms for the information age. At the Marine Corps service level, the Deputy Commandant for Information, Marine Corps Forces Cyber Command, and Marine Corps Information Operations Center should set the pace for the rest of the joint force while providing sufficient guidance for the Operating Forces to execute testing and evaluation of different unit-level organization, modernized equipment, and techniques and procedures. However, operations to achieve a cognitive effect ultimately come down to the leadership, training, creativity, and initiative of the individual commander, advisor, or Marine. Deputy Commandant for Information, in conjunction with Deputy Commandant for Combat Development and Integration, should continue to develop and implement a modern concept for combined arms at the lowest levels possible. Upon validation, approval, and doctrinal implementation, such a concept should be taught at entry level schools.

While Marines naturally vector toward fire and maneuver, the critical ingredient of cognitive effects through deception must be inculcated at the earliest stages of training, and it starts with changes to the doctrinal publications.

The new concept is that of direct, indirect, and cognitive effects to achieve modern combined arms. The leader makes appropriate considerations in planning, and then subordinate units are tasked appropriately, including the designation of a Deceptive Effort. The Marine Corps has an immediate opportunity to regain the initiative in the joint force and against its adversaries – an opportunity which must be seized to continue to be successful in the battlespace of the future and near future. Through the detailed development and implementation of modern combined arms, tactical actions that employ cognitive effects to defeat adversary capabilities will, in turn, translate to strategic effects that erode and eventually defeat the adversary's will.

---

[1] Headquarters US Marine Corps, *Marine Corps Operating Concept (MOC): How an Expeditionary Force Operates in the 21st Century*, (Washington, DC: Headquarters US Marine Corps, September, 2016), 5.
[2] Ibid., 0.
[3] Ibid., 6.
[4] Sun Tzu, *The Art of War*.
[5] Headquarters US Marine Corps, *Marine Operating Concept*, 8.
[6] Ibid., 9.
[7] Ibid., 20.
[8] Chuck Hagel, Secretary of Defense Memo: "Defense Innovation Initiative," November 15, 2014, 1.
[9] Ibid., 2.
[10] Ibid., 1.
[11] Headquarters US Marine Corps, *Marine Operating Concept*, 6.
[12] Christopher Walker, Shanthi Kalathil and Jessica Ludwig, "Forget Hearts and Minds," *Foreign Policy*, September 14, 2018, https://foreignpolicy.com/2018/09/14/forget-hearts-and-minds-sharp-power/amp.
[13] Brandon Valeriano, Benjamin Jensen, and Ryan Maness, *Cyber Strategy: The Evolving Character of Power and Coercion*, (New York: Oxford University Press), 110.
[14] Loretta E. Reynolds, "DCI Remarks to Incoming TLS Students and CMC Fellows," (Quantico, VA: July 31, 2018), 2.
[15] Headquarters US Marine Corps, *Marine Operating Concept*, 8.
[16] Ibid., 8.

[17] Ibid., 6.
[18] Ibid., 25.
[19] Ibid., 25.
[20] *MAGTF Information Environment Operations Concept of Employment*, i.
[21] Ibid., i.
[22] Marine Corps Information Operations Center Bulletin 3, 3.
[23] *MAGTF Information Environment Operations Concept*, 1.
[24] Loretta E. Reynolds, "DCI Remarks to Incoming TLS Students and CMC Fellows," 2.
[25] Headquarters US Marine Corps, *Marine Operating Concept*, 9.
[26] Ibid., 20.
[27] *MAGTF Information Environment Operations Concept*, 4.
[28] Ibid.
[29] Ibid., 6-7.
[30] Ibid., 2.
[31] Headquarters US Marine Corps, *Warfighting*, MCDP 1 (Washington, DC: Headquarters US Marine Corps, June 20, 1997), 94.
[32] Headquarters US Marine Corps, *Marine Operating Concept, 20.*
[33] Headquarters US Marine Corps, *Warfighting, 91*.

Working Bibliography

Clark, J. P. "The Competition Continuum Joint Doctrine Note Proposal." PowerPoint Presentation. Joint Doctrine Planning Conference, May 2018.

Cleveland, Charles, Benjamin Jensen, Susan Bryant, and Arnel David. *Military Strategy in the 21st Century: People, Connectivity, and Competition*. Cambria, 2018.

Connel, Mary Ellen and Ryan Evans (rapporteurs). *Russia's Ambiguous Warfare and Implications for the U.S. Marine Corps*. Arlington: Center for Naval Analysis, May 2015.

Department of Defense. *Strategy for Operations in the Information Environment.* 13 June 2016.

Deputy Commandant for Combat Development and Integration. *Marine Air Ground Task Force Information Environment Operations: Concept of Employment.* Quantico, VA: U.S. Marine Corps Combat Development Command, 2017.

Giles, Keir. *Handbook of Russian Information Warfare.* Rome: NATO Defense College, 2016.

Giles, Kier. *Russia's 'New' Tools for Confronting the West: Continuity and Innovation in Moscow's Exercise of Power.* Santa Monica: RAND Corporation, 2017.

Hagel, Chuck. Secretary of Defense Memo: "Defense Innovation Initiative." Washington, DC: November 15, 2014.

Headquarters, US Marine Corps. Marine Corps Intelligence Activity, *Future Operating Environment 2015-2025: Implications for Marines.*

Headquarters US Marine Corps. *Marine Corps Operating Concept (MOC): How an Expeditionary Force Operates in the 21st Century*. Washington, DC: Headquarters US Marine Corps, September, 2016.

Headquarters US Marine Corps. *Marine Corps Vision and Strategy*. Washington, DC: Headquarters US Marine Corps.

Headquarters US Marine Corps, *Warfighting*, MCDP 1. Washington, DC: Headquarters US Marine Corps, June 20, 1997.

Ingram, David. "Facebook says 126 million Americans may have seen Russia-linked political posts." *Reuters.* October 30, 2017.

Joint Publication 1, *Doctrine for the Armed Forces of the United States*, 12 July 2017.

Joint Publication 313. *Information Operations*. 20 November 2014.

Lyall, Jason and Isaiah Wilson III. "Rage against the Machines: Explaining Outcomes in Counterinsurgency Wars." *International Organization*, 1, 2009.

MCDP 1, *Warfighting*.

MCWP 3-40.4, *Marine Air Ground Task Force Information Operations.*

Paul, Christopher and William Marcellino. *Dominating Duffer's Domain: Lessons for the U.S. Marine Corps Information Operations Practitioner.* Santa Monica: RAND Corporation, 2017.

The Return of Global Russia. Washington: Carnegie Endowment for International Peace, 2018.

Thomas, Timothy. "Russia's Reflexive Control Theory and the Military." *Journal of Slavic Studies*, 2004.

U.S. Department of Defense, "Summary of the 2018 *National Defense Strategy of the United States of America*," 2018, https://www.defense. gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf

Valeriano, Brandon, Benjamin Jensen, and Ryan Maness. *Cyber Strategy: The Evolving Character of Power and Coercion.* New York: Oxford University Press.

Walker, Christopher, Shanthi Kalathil and Jessica Ludwig. "Forget Hearts and Minds." *Foreign Policy.* September 14, 2018, https://foreignpolicy.com/2018/09/14/forget-hearts-and-minds-sharp-power/amp.

Wolfsfeld, Gadi, Elad Segev, and Tamir Sheafer. "Social Media and Arab Spring: Politics Comes First. *The International Journal of Press/Politics, 2, 2013.*