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14. ABSTRACT Current trends, including the action of several potential adversaries, suggest that operating effectively in the cognitive dimension will be necessary to achieve tactical, strategic and operational objectives. However, the current lack of an accepted holistic framework cripples U.S. efforts to operate in this dimension. After analyzing and comparing a survey of historical cases to identify themes, this paper proposes an outline for such a framework. Several advantages of such a framework are identified: first, it helps categorize operations affecting the cognitive domain in a way that highlights and elucidates the interaction between cognitive and physical dimensions. Second, conceptualizing desired end-states in terms of the behavior of specified groups allows analysis in terms of those groups' decision making processes. Third, this analysis facilitates incorporating and applying recent developments in behavioral psychology to military planning.					
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FUTURE WAR PAPER

Influencing Behavior:

A Conceptual Framework for the Cognitive Dimension

**SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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During World War I, the Allies flew aircraft made of Balsa wood and fired archaic weapons across No Man's Land. In 2012, the allies fly super-sonic stealth aircraft and deliver precision weapons from unmanned drones. In World War I, the Allies dropped MISO/PSYOPs [Military Information Support Operations / Psychological Operations] leaflets. In Afghanistan in 2012, ISAF drops MISO/PSYOPs leaflets. Unlike any other current military capability, MISO/PSYOPs has not evolved any substantial concept during the past 90 years.

- Major General (Retired) Andrew Mackay, British Army (UK)¹

For all of recent history, the U.S. military has been virtually unchallenged in conventional operations in the physical dimension. While this mastery of operations in the physical dimension is necessary, the changing character of war increasingly demands effective operations in the cognitive dimension² as well.³ However the U.S. has not demonstrated similar prowess in this dimension. Following criticism over information-related performance in recent conflicts,⁴ the U.S. military began devoting considerable doctrinal effort toward improving effectiveness in this sphere.⁵ However the effort has lacked a common conceptual framework which resulted in disjointed endeavors and stumbles in execution. To improve potency in the cognitive dimension, the U.S. military must begin with a holistic and overarching framework in order to structure thinking, connect related doctrinal topics, aid in studying from history, and facilitate planning.

This paper begins by reviewing trends that indicate the increasing importance of the cognitive dimension and highlights U.S. deficiencies in this area. Identifying the fundamental problem as a lack of holistic framework, it analyzes several historical case studies to provide the

basis for sketching such a framework. It concludes with some implications for doctrine, training, and organization.

The Importance of Cognitive Effects: Trends in the Operating Environment

While future conflicts will doubtlessly continue to include high-intensity, kinetic operations, several trends suggest that coincident with the kinetic will be non-kinetic means designed to decisively affect the cognitive dimension. First, potential adversaries are already focusing their efforts on exploiting the cognitive dimension. Both the Chinese and Russian states have developed and are employing doctrines that seek to manipulate adversaries' and neutral parties' decision-making. This includes engendering domestic or international public support along with deceiving or confusing adversaries: delaying intervention and gaining time to present a *fait accompli*. China's "Three Warfare" concept employs non-kinetic means to simultaneously conduct media, psychological, and legal warfare ("lawfare") that affects adversary decision-making and prevents intervention that might interfere with Chinese strategic goals.⁶ This can be clearly seen in the South China Sea, where China uses international media and legal arguments to deter U.S. interference while physically garrisoning troops and other military capability in the area. Similarly, Russia drew upon ideas found in Soviet "Reflexive Control" concepts in developing its new concept, now dubbed "Ambiguous Warfare" and "Hybrid Warfare."⁷ Under this approach, Russia seeks to mask its intentions by using non-conventional means, working to confuse and slow adversary decision-making and to manipulate their behavior. Of particular note is its emphasis on unconventional and nonmilitary means. Russian Chief of the General Staff Valery Gerasimov explains, "the role of nonmilitary means of achieving political and strategic goals has grown, and in many cases, they have exceeded the power and force of weapons in their

effectiveness.... The open use of conventional forces - often under the guise of peacekeeping and crisis regulation - is resorted to only ... for the achievement of final success in the conflict.”⁸

These Chinese and Russian examples expose a second trend: growing reluctance of the U.S. to employ conventional military force to further national aims. Historically, the U.S. has been reluctant to employ conventional military force unless faced with overt hostile acts (such as Pearl Harbor in WWII or German U-Boat actions in WWI). Present political polarization appears to make consensus on the use of conventional force even more unlikely. This reluctance presents a vulnerability where potential adversaries can purposefully act in a “gray-zone”: insufficient to justify an American conventional military response, yet still capable of producing desired behavior. Discussing this ambiguity as an opportunity to exploit, Gerasimov noted a “blurring [of] the lines between the states of war and peace. Wars are no longer declared and, having begun, proceed according to an unfamiliar template.”⁹ Arguably, the previously identified Russian and Chinese strategies are effective precisely because they target this U.S. tendency.¹⁰ The annexation of Crimea illustrates this reality, with Russian operations intentionally designed to avoid triggering NATO collective defense rules.¹¹ For the U.S., non-kinetic operations that cognize dimension as a means to a desired end could be more politically acceptable than conventional operations.

The third trend is an increasing expectation of significant civilian presence in the battlespace. In that regard, the blurred lines between combatants and non-combatants restrain the use of conventional military force.¹² Effective mobilization of a population to actively support a government (or a rival insurgent organization) is central to insurgencies and countering them. Even in conventional operations, civilians are a complicating factor in the battlefield, and influencing their behavior in certain ways can be an important supporting effort.¹³ Succeeding in

such an environment requires incorporating the cognitive dimension into planning and execution so that a full range of kinetic and non-kinetic actions are employed and their effects on decision-making and behavior are understood.

Along with the above trends, recent developments in behavioral psychology hold the promise of improved abilities to purposefully affect the cognitive dimension. These developments include enhanced methodologies, insights into group decision-making and group behavior, and better understanding of how groups influence individuals.¹⁴ Understanding decision-making allows planners to craft operations that are mindful of cognitive results: aiming for desirable or mitigating undesirable second-order effects. Similarly, scientific results reveal flawed assumptions that have previously driven bad practices and planning. For example, counter-intuitively, there is little connection between attitudes and behavior.¹⁵ Awareness of proven facts like these can improve operations by eliminating flawed and mistake-prone assumptions: for instance, treating opinion polls as an appropriate measure of effectiveness and a predictor of desired behavior.¹⁶

Poor Results from Past U.S. Efforts

The importance of the cognitive dimension has not been ignored in the U.S.; however, efforts to develop concepts and capabilities have not resulted in useful doctrine or successful execution overall. Multiple studies have demonstrated that Information Operations (IO) efforts in Afghanistan and Iraq were largely unsuccessful. As a 2012 RAND study concluded: “If the overall IO mission in Afghanistan is defined as convincing most residents of contested areas to side decisively with the Afghan government and its foreign allies against the Taliban insurgency, this has not been achieved.”¹⁷

A common theme in the RAND and other studies is that actions falling under the rubrics of IO, Strategic Communication (SC), and Public Diplomacy did not achieve the desired results. Still, diagnoses of the underlying problem vary dramatically. One view posits that failure discredits IO, while a second view attributes failure to a lack of institutional effort. According to the second view, IO was treated as ancillary to kinetic operations and an afterthought. The result was irrelevant messaging or, worse, a credibility gap when operations contradicted messaging and undermined coalition forces' ability to influence target populations.¹⁸ A final view suggests that IO was not only under-prioritized and ancillary during execution, but that as a conceptual approach it was misguided as well. Rather than draw from a (non-existent) cadre of military professionals who specialize in operations affecting the cognitive dimension, the military turned to contractors; the result was an advertising approach based on assumptions inappropriate for a conflict environment. Avoiding a "say-do gap" and crafting effective messages are necessary, but they are woefully insufficient if only seeking attitudinal changes rather than influencing desired behavior.¹⁹

Other Symptoms of the Problem

Consistently poor operational results are the inevitable result of a flawed conceptual approach. The current approach to the cognitive dimension lacks both (1) a holistic framework to guide integration and (2) interconnected organizations positioned and empowered to integrate information with other capabilities and all the instruments of national power. The challenge is first recognizing, then understanding and exploiting the cross-dimension interaction between the cognitive and physical dimensions. Without a holistic framework based on such an understanding, the cognitive dimension is treated in excess: either overemphasized or

overlooked. Both these scenarios ultimately lead to unsuccessful execution, but other symptoms are the isolated and disjointed development of doctrine and capabilities, and the lack of organizations to integrate and synchronize efforts in the cognitive dimension.

Doctrinal literature related to affecting the cognitive dimension is diverse, continually evolving, and sometimes contradictory. At various levels (the service, joint staff, and individual), numerous studies, operating concepts and doctrine has been written regarding U.S. capabilities in IO, SC, (Defense Support to) Public Diplomacy, and related fields. But this doctrine appears to be developed in isolation, with different authors and organizations providing differing concepts that significantly overlap in functionality. Neither the relationships among these fields nor their collective relevance within military operations have been identified; this greatly hinders effective application.

Also problematic is that most publications and informal doctrine focus primarily on discreet aspects of the problem, addressing techniques, processes, and best practices without showing relationship to the whole. Some focus solely on deceiving an adversary to gain an advantage in conventional combat,²⁰ while another looks exclusively at influencing the attitudes of a population in a stability or counterinsurgency operation.²¹ Still others focus on clarifying specific capabilities, limitations, legal considerations, and methods for synchronizing various Information Related Capabilities (IRCs).²² The scope of other doctrine is limited to messaging and media only,²³ emphasizing the importance of maintaining credibility by separating Public Affairs from IO (particularly Psychological Operations (PSYOP)).²⁴ Each of these topics is important and valuable to execution, but together they are confined within the means – techniques, processes and specific capabilities – and cannot compensate for the lack of a holistic conceptual framework.

At the national level, operations affecting the cognitive dimension are further complicated by bureaucratic squabbles and ideological differences. Congress and the U.S. public harbor a deep concerns about government propaganda, and previously the U.S. committed to influencing foreign populations only when major national security interests are at stake. For example, in 2002, Secretary Rumsfeld abandoned efforts to create the Office of Strategic Influence (OSI). This effort to focus on influencing foreign audiences suffered intense criticism after OSI's existence was reported by the *New York Times*.²⁵ Only during the World Wars and several years into the Cold War was the U.S. government able to stand up organizations to focus IO in support of U.S. policy.²⁶

During the Cold War, the United States Information Agency (USIA) was the nation's lead agency for understanding and influencing foreign audiences. The USIA served as a central point for coordination, and at its height, its director was a cabinet-level official who had direct access to the President and participated in all National Security Council (NSC) meetings. He assisted in the formulation and execution of US foreign policy and ensured that efforts to counter a global communist threat integrated operations expressly aimed at the cognitive dimension. However, this integration at the highest levels no longer exists. USIA was broken up and largely subsumed by the Department of State in 1999.²⁷ Major functions were spread between five departments, with smaller functions even more widely dispersed. State Department career paths precluded the kind of specialization possible in USIA; thus, as personnel retired, over 40 years of expertise was lost.²⁸ Today the NSC remains responsible for coordinating SC but, indicative of its stature, this responsibility has been delegated to a subordinate staff committee.²⁹

Even within USIA, there was constant ideological debate regarding values and the best means to influence foreign audiences – whether through cultural engagement, media operations,

or advocacy (propaganda).³⁰ The result of this tension was bureaucratic infighting for control of resources and a tendency to emphasize one method over the others, rather than to develop an integrated approach. Similar struggles exist within the Department of Defense today; the 2012 conflict and misunderstandings between advocates of SC and Public Affairs is perhaps the most visible.³¹ This set of internal struggles is partly responsible for the lack of a holistic conceptual framework.

To summarize, current trends suggest that operating in the cognitive dimension will only increase in importance, and recent scientific advances offer considerable potential for enhancing U.S. capabilities. Yet the lack of an accepted holistic framework cripples U.S. efforts to operate in the cognitive dimension. Recent history and current events indicate a tendency to focus on developing tactics, techniques, procedures, and technology in isolation, rather than in the context of a holistic framework. Even historical case studies are used in a manner to illustrate isolated points rather than find common trends.³² By contrast, the process of analyzing and comparing a set of historical cases with an eye on the future can aid in developing an integrated framework that can underpin doctrine, aid in learning from history, and guide operational planning.

Case Studies Pointing to a Conceptual Framework

The recent past provides many case studies demonstrating the critical role of the cognitive dimension on success or failure at the tactical, operational, and strategic levels. These cases permit an analysis of the operational art employed as higher-level goals are reconciled with a range of kinetic and non-kinetic means. Yet despite the variety among these cases, several recurring themes emerge and will form the basis of an outline for a conceptual framework: first, cross-dimension interaction between the cognitive and physical dimensions is always present,

and successful operations account for this fact; second, actions in the cognitive dimension can be usefully analyzed and compared in terms of whether the effects sought (ends) were offensive or defensive and whether the method exploited or isolate the cognitive dimension; third, a deep understanding of the Target Audience is critical and often developed through a cyclical process including action, assessment, and refinement/redesign.

Strategic Case – Crimea

Russia's operations to annex Crimea demonstrated a sophisticated understanding of how to integrate actions in both the cognitive and physical dimensions to yield strategic results. Russian policy determined that Crimea had to be recovered in support of vital national interests, even at the risk of provoking the West. Recovering Crimea required deploying military forces while avoiding NATO military intervention. To accomplish this end, Russia sought to degrade NATO decision-making, preventing NATO leaders from understanding what was happening until presented with a *fait accompli*. The Russian methodology was a combination of false messaging, clandestine actions by non-conventional forces, and manufacturing a "legal" justification for subsequent Russian intervention to stabilize the region.³³ The integration of these unconventional means with the employment of conventional military forces was necessary to success since neither conventional nor unconventional means were able to independently achieve Russia's strategic ends. Success of the Russian effort demonstrates a clear appreciation of the strategic utility in understanding and exploiting the cognitive dimension, which is a key part of "New Generation Warfare."³⁴

The interaction of the cognitive and physical dimensions is critical to the success of this operational design. Analyzing and categorizing actions in the cognitive dimension in terms of the

effects sought and the methods employed is useful way to highlight how this interaction occurs. While the overall strategic objective was positive (offensive) in annexing new territory, Russian actions in the cognitive dimension were actually defensive. With regard to NATO, Russia sought to prevent or delay intervention, clearly a negative or defensive end. Similarly, Russian efforts to influence the Crimean population were designed to prevent local interference with the annexation. While the ends were defensive, the method was designed to exploit the cognitive dimension by purposefully sowing misinformation and purposefully choosing times to act when NATO would be least prepared to make a decision to intervene. Classifying this case as an example of defensive ends with an exploitative method will aid in comparing and contrasting other cases.

Operational Case – Military Deception

Military deception is a classic example of exploiting the cognitive dimension for an effect in the physical. In terms of ends and methods in the cognitive dimension, military deception usually has a defensive end – attempting to prevent interference with the main effort – and employs an exploitative method that uses the cognitive dimension to affect the physical. The means often include physical action, such as feints or false troop-positioning, as well as non-physical action, such as false signal and radio traffic and planting false intelligence reports. On this analysis, the similarities with the Russian Crimean model are apparent, albeit at a operational vice strategic level.

Successful military deception frequently demonstrates a keen understanding of the target's expectations and decision-making, and deception plans seek to reinforce these preconceptions with erroneous information. They also frequently utilize a feedback process to

confirm and refine actions. As an example, Operation FORTITUDE, the deception plan for the cross-channel assault to Normandy, exhibited all of these characteristics. Allied commanders capitalized on German preconception about the likelihood of a landing at Pas de Calais based on plans for Operation SEA LION, the German plans for a cross-channel assault. A combination of physical actions (air bombardments) and clandestine operations convinced German theater and strategic leaders of this threat. Through ULTRA, Allied planners were able to confirm the effectiveness of their deception efforts and refine them.³⁵

Operational Case – Fallujah 2004³⁶

The two major operations in Fallujah permit comparison between two different U.S. IO efforts and between U.S. and insurgent approaches to IO. The U.S. neglected IO in 2004, and this failure was exploited by insurgents. Learning from these errors, in 2005 the U.S. deliberately conducted IO, but did so from a tactical perspective: focusing on how U.S. IO could minimize the impact of the cognitive dimension on a particular battle. In contrast, insurgent actions in both 2004 and 2005 demonstrate an employment of IO from an operational perspective. The insurgents deliberately used IO with an offensive end and exploitative method: using IO to create international pressure on the U.S. to withdraw was their main method for victory.

The insurgent goal was to gain and maintain control of substantial portions of Iraq. This required expelling U.S. forces and undermining the Government of Iraq. Their operational method was insurgency: separating the population from government while making the government increasingly ineffective. In support of their insurgent strategy, insurgents employed IO to influence the local population and international audience. They aimed to become regarded as protectors who defended the people from coalition forces and the Iraqi government. The

primary target was the local population, who would change their behavior based on what they believed about their safety and protection. The secondary target, international audiences, would pressure U.S. forces to withdraw from Fallujah and Iraq if insurgent IO could convince international audiences that blame for humanitarian crises and non-combatant casualties was due to U.S. operations. To reach this audience, insurgents used international media, paying *Al Jazeera* reporters to distribute videos and provide favorable coverage, which would be repeated by Western media.³⁷

As local and international support was built, the insurgents sought to draw U.S. and Iraqi forces into a major engagement in Fallujah where they could inflict damage on American forces and portray themselves as protectors of the people. Urban fighting inevitably resulted in civilian casualties and collateral damage; insurgents would exploit images of this to demonstrate the callous indifference and brutal tactics of American forces. This is exactly what happened in 2004 when, within days, insurgent influence through the media created enough international pressure that American forces were halted and then withdrawn. As in the Russian case, the cognitive and physical dimensions overlapped. Every physical action advanced a cognitive agenda, and media messaging to exploit these actions furthered the cognitive strategy.³⁸ Not unlike the Vietcong fighting half a century before, the insurgents in Iraq used IO effectively.³⁹ Both forces illustrate the often-cited idea that insurgents reverse the typical order given to physical and IO. Instead of using IO reactively to respond to the results of physical engagements, both the Vietcong and insurgents of today began with a desired cognitive effect and designed actions that would support this goal.⁴⁰

Tactical Case – Fallujah 2005

In both battles for Fallujah, U.S. forces sought an overall goal of establishing Iraqi government control by degrading the insurgents' ability to contest its sovereignty. Clearing Fallujah would deny Sunni insurgents a key base of operations. While this is a conventional military objective, insurgent success in 2004 demonstrated the importance of the cognitive dimension. In 2005, planners were therefore more sensitive to the importance of the cognitive dimension and directly sought to prevent it from having a similar effect. In particular, they significantly enhanced their IO efforts and emphasized ways to “creat[e] additional ‘maneuver’ room for combat operations in Fallujah.”⁴¹ Their method for achieving this ‘room’ was based on the observation that negative media reporting led to negative public opinion, resulting in political intervention that stopped conventional operations. However, coalition efforts could affect the media by tightening control of embedded reporters, developing procedures for prompt and proactive responses regarding air strikes and civilian casualties, and monitoring international media to assess progress and redesign actions as needed.⁴²

While Fallujah 2005 was a case of U.S. IO actions supporting success in a major battle, it differs significantly from the other cases in terms of method. The overall U.S. objective in this battle was offensive, but the goal of actions in the cognitive dimension was defensive: preventing external political interference. Moreover, the method employed was an isolating approach that sought to separate the physical battlespace in Fallujah from the cognitive dimension. In short, planners in 2005 viewed the cognitive dimension as something to avoid or manage if necessary, whereas in every other case the cognitive dimension was seen as something to exploit, a necessary part in achieving operational and strategic goals.

A Conceptual Framework for the Cognitive Dimension

The case studies above highlight several themes. First, interaction between the cognitive and physical dimensions was present at every level of war, and successful operations understood and accounted for this interaction. Most of the successful operations purposefully exploited the interaction, leveraging advantage in the cognitive dimension to achieve goals in the physical dimension. However, U.S. operations in Fallujah 2005 indicate that tactical success may be achievable by sufficiently isolating the physical environment from cognitive effects. Related to this cross-dimension interaction is the fact that a wide range of actions can affect the cognitive dimension. Examples of non-kinetic, unconventional, and traditional media messaging all have an effect. However, physical and kinetic actions also have a significant effect, and the savvy belligerent may design physical actions primarily for their cognitive effect.

Second, analyzing the cognitive dimension in terms of ends (offensive or defensive) and methods (exploitative or isolating) is useful in highlighting and clearly considering the integrated relationship between the physical and cognitive dimensions. It also helps underscore a clear linkage between ends, means and circumstances, methods, and intermediate goals. Clearly defined ends help identify specific Target Audiences and articulate desired behavioral outcomes. This is related to a third trend, an acute understanding of the Target Audience and the factors influencing its decision-making is important to successful planning. Lastly, the complexity of the interactions and difficulty in understanding decision-making frequently requires a cyclical refinement process to confirm effectiveness and refine or redesign actions.

The common themes described above must be at the core of any holistic conceptual framework for the cognitive dimension. Using the concept of *influence* – affecting and changing a target’s behavior, attitudes, or understanding – is particularly helpful at illuminating the cross-dimension interaction.⁴³ As a noun, influence refers to possessing the ability to influence a

Target Audience; as a verb it refers to the act of influencing that Target Audience. Using influence to focus understanding of the cognitive dimension emphasizes understanding the environment in terms of specific Target Audiences, their decision-making processes, one's desired behaviors, and the methods and means that will be most effective at accomplishing sought changes. Using such a framework will assist in ensuring that the methods and means are not viewed in isolation but understood within a holistic system.

Structuring this framework in terms of operational art, the overall method will include a set of intermediate goals from the cognitive and/or physical dimensions. While an operation's *overall* ends may not always entail distinctly cognitive goals (none of the case studies had purely cognitive ends), the method should recognize the cross-dimension interaction between cognitive and physical dimensions. Planners should select a method that leverages this and includes intermediate goals in both the cognitive and physical dimensions. Further, any end can potentially be analyzed with an eye to the cognitive dimension by focusing on influence and defining goals in terms of the desired Target Audience behavior and decisions.⁴⁴

Cognitive intermediate goals identified in the method can be further developed through a subordinate operational art relating cognitive ends with appropriate methods. Cognitive ends should be defined as offensive or defensive; doing so will clarify how these cognitive ends relate to the overall operational approach and ensure they remain fully integrated. The means, based on the circumstances, can include the full range of conventional and unconventional capabilities and all instruments of national power. Existing doctrine already focuses on these means and provides best practices for their individual employment. The method should be first understood as either exploitative or isolating. It should seek to integrate and synchronize the available means based on an understanding of the Target Audience and its decision-making process. Here the results of

modern behavioral science and detailed Target Area Analysis can be best applied, as this understanding will reveal factors most susceptible to influence (critical vulnerabilities) and aid in synchronizing actions to best exert that influence (phasing operations in time and space).

The utility of this framework is that it structures inclusion of the cognitive dimension as an integrated component of operational art. Conceiving of operations in terms of influence and the desired behavior of various target groups emphasizes the importance of decision-making and the utility of behavioral psychology. Classifying cognitive actions based on their ends and methods helps clarify the integrated role of the cognitive dimension in the overall design while still facilitating functional and detailed planning.

Using this framework as an aid to planning, the obvious challenge is the complexity and uncertainty associated with understanding a targets' decision-making. Since the ends in the cognitive dimension are defined in terms of behavior, selecting the correct method might require an impossibly deep level of understanding. However, this complexity is not caused by the framework but is an inherent feature of the future operating environment. In that regard, this framework should prove helpful in highlighting the pre-existing reality of the situation. Further, once identified, tools from behavioral psychology can mitigate some of the difficulty. Most important is the methodological use of the scientific method to improve understanding for how a Target Audience functions. Instead of viewing operational planning in the cognitive dimension as static and a one-time event, the operations processes should be viewed like a science experiment to understand factors influencing behavior. The planner's initial understanding about the target's decision-making process (a hypothesis) yields a method for influence, which, when executed, produces observable results (an experiment). These observations will validate, refine,

or falsify the hypothesis. Having the correct initial design is less important than quickly recognizing and correcting errors.⁴⁵

Conclusions and Implications

This conceptual framework should prove useful in the development and refinement of doctrine and can guide planning and execution of operations. Adopting such a framework also brings necessary changes to doctrine, education and training, and organization.

Existing doctrine for planning does not need major changes, but modifications are required in some of the steps. Potential Target Audiences need to be identified earlier in the planning process in order to focus intelligence analysis problem-framing. Center of gravity analysis could be adjusted to better incorporate critical factors and vulnerabilities affecting decision-making. Red-cell, enemy courses of action, and wargaming would all be enhanced by the greater emphasis on understanding enemy decision-making. The importance of defining the specific Target Audiences and desired outcomes as well as choosing appropriate measures of effectiveness require additional emphasis in the commander's guidance and intent. Similarly, because the course of action is driven by the current hypothesis about a targets' decision making, this should be explicitly described. The biggest changes would be institutionalizing the cyclical process of assessment, evaluation, and refinement that mirrors the scientific method. While briefly mentioned in planning doctrine, the concept is not developed or practiced in training.

With regard to training and education, planning exercises must include sufficient depth and realism to allow for a reasonably informed hypotheses about Target Audiences' decision-making processes. And because understanding decision-making is critical to action, education in the basic fundamentals of behavioral psychology and decision-making should be included across

the force, with specialized courses for planners and commanders. Furthermore, planning exercises should include opportunities to practice the critical step of analyzing the results of executed actions, confirming the design or suggesting that a major redesign is necessary. The challenge of responding to unexpected results that suggest major misunderstandings is rarely practiced.

In terms of organization, successful operations in the cognitive dimension demand proficiency in all aspects of actions in the cognitive dimension. A primary military specialty may not be required, but tracking training and experience and rewarding experience and skill is important. Even more important are planners and commanders who appreciate the cognitive dimension and its interaction with the physical dimension, and can clearly define the relationship between cognitive dimension and the overall operational approach. By working from a common framework, these leaders could drive the integration of all means to achieve goals by the effects in both dimensions. Lastly, group and individual decision-making is very regionally and culturally dependent. Personnel with a deep understanding of influence, decision-making and appropriate regional/cultural expertise are critical to good influence operations.

In a future that requires greater facility at operating in the cognitive dimension, this conceptual framework for the cognitive dimension could provide the foundation for the U.S. military to adapt, improve, and succeed in complex environments.

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Appendix - Glossary

Cognitive Dimension - The mind of the decision maker or specific audience and is the dimension where people think, conceptualize, perceive, visualize and decide (Marine Corps Operating Concept for IO).

Influence - The *application* (verb) of coordinated actions to foster attitudes, behaviors, or decisions by foreign Target Audiences that further U.S. interests and objectives; or the *ability* (noun) to conduct actions that affect behavior and attitudes of specific a Target Audience.⁴⁶

Information Environment - The aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information (Marine Corps Operating Concept for IO).

Information Operations (IO) - Integrated employment during military operations of information related capabilities (IRCs) in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision-making of adversaries and potential adversaries while protecting our own capabilities (JP 3-13).

Military Information Support Operations (MISO) - Planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately the behavior of foreign governments, organizations, groups, and individuals in a manner favorable to the originator's objectives. Renamed from psychological operations (JP 3-13).

Public Affairs - Public information, command information, and public engagement activities directed toward both the internal and external publics with interest in DOD ... opportunities for overlap exist between PA and IO (JP 3-13).

Public Diplomacy – An international actor's attempt to conduct its foreign policy by engaging with foreign publics. It has five core components: listening, advocacy, cultural diplomacy, exchange diplomacy, and international broadcasting.⁴⁷

Psychological Operations – see MISO.

Strategic Communication (SC) - Focused U.S. Government efforts to understand and engage key audiences to create, strengthen, or preserve conditions favorable to the advancement of U.S. Government interests, policies, and objectives through the use of coordinated programs, plans, themes, messages, and products synchronized with the actions of all instruments of national power (JP 1-02).

Target Audience Analysis (TAA) - An empirical process in which the motivations for specific group behavior are analyzed using qualitative and quantitative research methods.⁴⁸

Endnotes

1. Andrew Mackay, Steve Tatham, and Lee Rowland., *The Effectiveness of U.S. Military Information Operations in Afghanistan 2001-2010: Why RAND Missed the Point* (Shrivenham, UK: Defence Academy of the UK, 2012), i.
2. The cognitive dimension deals with “the mind of the decision maker or specific audience and is the dimension where people think, conceptualize, perceive, visualize and decide.” See Headquarters Marine Corps, *Marine Corps Operating Concept for Information Operations* (Quantico, VA: U.S. Marine Corps, February 4, 2013), 5-6.
3. Headquarters Marine Corps, *Marine Corps Operating Concepts* (Quantico, VA: U.S. Marine Corps, June 2010), 135-136. Hereinafter, MCOC.
4. Steve Tatham, *U.S. Governmental Information Operations and Strategic Communications: A Discredited Tool or User Failure? Implications for Future Conflict* (Carlisle Barracks PA: United States Army War College Press, December 2013).
5. This includes developing doctrine for Information Operations (IO) and Strategic Communication (SC).
6. Larry M. Wortzel, *Chinese People’s Liberation Army and Information Warfare* (Carlisle Barracks PA: United States Army War College Press, March 2014), 29-42.
7. Maria Snegovaya. *Putin’s Information Warfare in Ukraine*. (Washington, DC: Institute for the Study of War), 1, 12-15.
8. Mary Connel and Ryan Evans, *Russia’s “Ambiguous Warfare” and Implications for the U.S. Marine Corps* (Arlington, VA: Center for Naval Analysis, May 2015), 3-4. Timothy Thomas notes that Gerasimov also draws attention to the increasing prominence of non-military measures in conflict, arguing that non-military measures are occurring at a rate of 4:1 compared to military operations. Timothy Thomas, “Russia’s military Strategy and Ukraine: Indirect, Asymmetric – and Putin-led,” *Journal of Slavic Military Studies* 28 (2015): 445-461.
9. Connel and Evans, *Russia’s “Ambiguous Warfare,”* 3.
10. Snegovaya, *Putin’s Information Warfare in Ukraine*, 21.
11. Connel and Evans, *Russia’s “Ambiguous Warfare,”* 12.
12. HQMC, *MCOC*, 110.
13. HQMC, *USMC Operating Concept for IO*, 13-14.
14. Andrew Mackay and Steve Tatham, *Behavioural Conflict: Why Understanding People and Their Motives Will Prove Decisive in Future Conflict* (Saffron Walden, UK: Military

Studies Press, 2011), 62-70, 157-178.

15. Mackay and Tatham, *Behavioral Conflict*, 169. See also: Eric Larson, et al., *Foundations of Effective Influence Operations: A Framework for Enhancing Army Capabilities* (Santa Monica, CA: RAND, 2009), chapter 2, passim.

16. Mackay and Tatham. *Behavioral Conflict*, 105-111. Ironically, the 2009 RAND study failed to highlight this and overlooks the fact that the different publications that it surveys varied in the specific topic of their research, varying from attitudes, to opinions and to behavior changes.

17. Arturo Munoz, *U.S. Military Information Operations in Afghanistan: Effectiveness of Psychological Operations 2001–2010* (Santa Monica, CA: RAND, 2012), xv- xvi. See also Bing West, “Iraq and a Singular, Enduring Information Failure,” in *Ideas as Weapons*, ed. G.J. David and T.R. McKeldin III (Washington, DC: Potomac Books, 2009) and William Lind, “The Power of Weakness,” in *Ideas as Weapons*, ed. G.J. David and T.R. McKeldin III (Washington, DC: Potomac Books, 2009).

18. Munoz, *U.S. Military Information Operations in Afghanistan*, xiv-xx, 1-5. See Kristin Lord, “Public Engagement 101: What Strategic Communication Is, Isn’t and Should Be” *Joint Forces Quarterly* 56 (1st Quarter 2010): 6-9, and Michael Mullen, “Strategic Communication: Getting Back to Basics,” *Joint Forces Quarterly* 55 (4th Quarter 2009): 2-4.

19. Tatham, *U.S. Governmental Information Operations*, 1-4.

20. Headquarters Marines Corps, *Marine Corps Operations*, MCDP 1-0 (Quantico, VA: U.S. Marine Corps, August 9, 2011), 3-19. See also HQMC, *USMC Operating Concept for IO*, p2. As another example, as of writing, the Marine Corps Information Operations Center (MCIOC) is developing on a concept dubbed “Attack the Cognitive” (ATC) to aid in integrating the cognitive dimension and information operations into the Marine Corps Planning Process. The initial application of this concept in the 2016 MEF large scale exercises (LSEs) have been exclusively focused on deception efforts that will drive the adversary decision making to inappropriately employ his forces or simply withdraw with limited fighting.

21. HQMC, *Marine Corps Operating Concepts*, 127, 136.

22. U.S. Department of Defense, *Information Operations*, JP 3-13 (Washington, DC: Joint Staff, November 20, 2014).

23. Lord, “Public Engagement 101,” *JFQ*.

24. Stephen Badsey, “Bridging the Firewall? Information Operations and U.S. Military Doctrine in the Battles of Fallujah,” in *Propaganda, Power and Persuasion: From World War I to Wikileaks*, ed. David Welch (New York: I.B. Tauris, 2014).

25. James Dao and Eric Schmitt, "A Nation Challenged: Hearts and Minds; Pentagon Readies Efforts to Sway Sentiment Abroad," *New York Times*, February 19, 2002, <http://www.nytimes.com/2002/02/19/world/nation-challenged-hearts-minds-pentagon-readies-efforts-sway-sentiment-abroad.html?pagewanted=all>.

26. During World War II, this was the Office of Wartime Information which, after initially being cut and merged with the State Department at the end of the war, was eventually resurrected (after several name changes) into the USIA in 1953. See Cull, *The Cold War and the USIA*, 1-82.

27. Nicholas J. Cull, *The Cold War and the United States Information Agency: American Propaganda and Public Diplomacy, 1945-1989* (New York: Cambridge University Press, 2008), 482- 485.

28. Nicholas J. Cull, "The Tragedy of American Public Diplomacy 1989-1999: The Last Decade of the United States Information Agency Reconsidered," in *Propaganda, Power and Persuasion: From World War I to Wikileaks*, ed. David Welch (New York: I.B. Tauris, 2014), 123-15.

29. The White House, *National Framework for Strategic Communication* (Washington, D.C., March 2010), 7-12 and The White House, *National Framework for Strategic Communication* (Washington, D.C., March 2012).

30. For a balanced account of the three schools of thought, see Cull, *The Cold War and the USIA*. His references include several other works that attempt to trace the relative importance of each of these strands of Public Diplomacy. For a strong advocate of Cultural engagement see Richard Arndt, *The First Resort of Kings: American Cultural Diplomacy in the Twentieth Century* (Washington, DC: Potomac Books, 2005). Arnd is sharply critical of advocacy as simply dressed up propaganda and he considers reporting as too one-directional. A classic example of an advocate for propaganda is Arthur Meyerhoff, *The Strategy of Persuasion* (New York: Coward-McCann, 1965). From the advertising world, Meyerhoff argues for the importance of propaganda and the need for targeted messaging in Public Diplomacy.

31. Tatham, *U.S. Governmental Information Operations*, 5-7.

32. For example *Marine Corps Operating Concept for Information Operations* provides multiple historical vignettes that all illustrate very different points but does not attempt to compare or contrast these vignettes to gain a greater understanding.

33. Janis Berzins, *Russia's New Generation Warfare in Ukraine: Implications for Latvian Defense Policy* (Latvia: National Defence Academy of Latvia, April 2014), 1-7.

34. For a detailed analysis of Russian employment of information operations in Crimea and its role in Russian warfighting concepts, see Brett Perry, "Non-Linear Warfare in Ukraine: The Critical Role of Information Operations and Special Operations," *Small Wars Journal* (Aug

14, 2015), <http://smallwarsjournal.com/jrnl/art/non-linear-warfare-in-ukraine-the-critical-role-of-information-operations-and-special-opera>.

35. HQMC, *Marine Corps Operating Concept for IO*, 9.

36. The case study provided is based on: Badsey, “Bridging the Firewall” in *Propaganda, Power and Persuasion*. See also: James West, “Information (in) Operations: More than Technology,” in *Ideas as Weapons*, ed. G.J. David and T.R. McKeldin III (Washington, DC: Potomac Books, 2009), 127-129.

37. Jennifer Morris Mayne, “Fighting for Perceptions: Tactical IO in 2004 Iraq,” in *Ideas as Weapons*, ed. G.J. David and T.R. McKeldin III (Washington, DC: Potomac Books, 2009), 367-368.

38. Badsey, “Bridging the Firewall” in *Propaganda, Power and Persuasion*, 197-199.

39. Dean M. Havron, Martin Sternin and Robert J. Teare, *The Use Of Cultural Data In Psychological Operations Programs* (Arlington, VA: Advanced Research Projects Agency), 2-3.

40. Jason Logue, “Propaganda of the Deed,” in *Australian Army Intelligence Corps Journal* (2015), <https://medium.com/the-bridge/propaganda-of-the-deed-808fd4b6bc>.

41. Thomas F. Metz, Mark W. Garret, James E. Hutton, and Timothy W. Bush, “Massing Effects in the Information Domain,” in *Ideas as Weapons*, ed. G.J. David and T.R. McKeldin III (Washington, DC: Potomac Books, 2009), 268.

42. Mayne, “Fighting for Perceptions,” in *Ideas as Weapons*, 368-369.

43. Influence is no longer defined in formal doctrine, but used throughout articles and studies. This definition is taken from Larson, et al., *Foundations of Effective Influence Operations*, 2-3.

44. MCIOC, as of writing, is working on several planning tools and templates for use in the Marine Corps Planning Process. One tool, the Decision Chain Analysis, aids in tracing the chain of decisions that leading up to a target’s desired (or undesired) behavior. This tool aids in identifying friendly decision points and the decision support matrix.

45. Interestingly, this bears striking similarities to Systemic Operational Design and its attempt to treat planning and execution of operations as a way to build “understanding through a recursive dialectical process ... the empirical, inductive vehicle science employs to propose and test theories.” See: Huba Wass de Czege, “Systemic Operational Design: Learning and Adapting in Complex Missions,” *Military Review* (Jan-Feb 2009), 8.

46. Larson, et al., *Foundations of Effective Influence Operations*, 2-3.

47. Cull, *The Cold War and the USIA*, xv.

48. Tatham, *U.S. Governmental Information Operations*, 8.

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