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Academics vs. Aliens: Selected Essays on Social Science Research, Defense Education, and the Power of Partnerships

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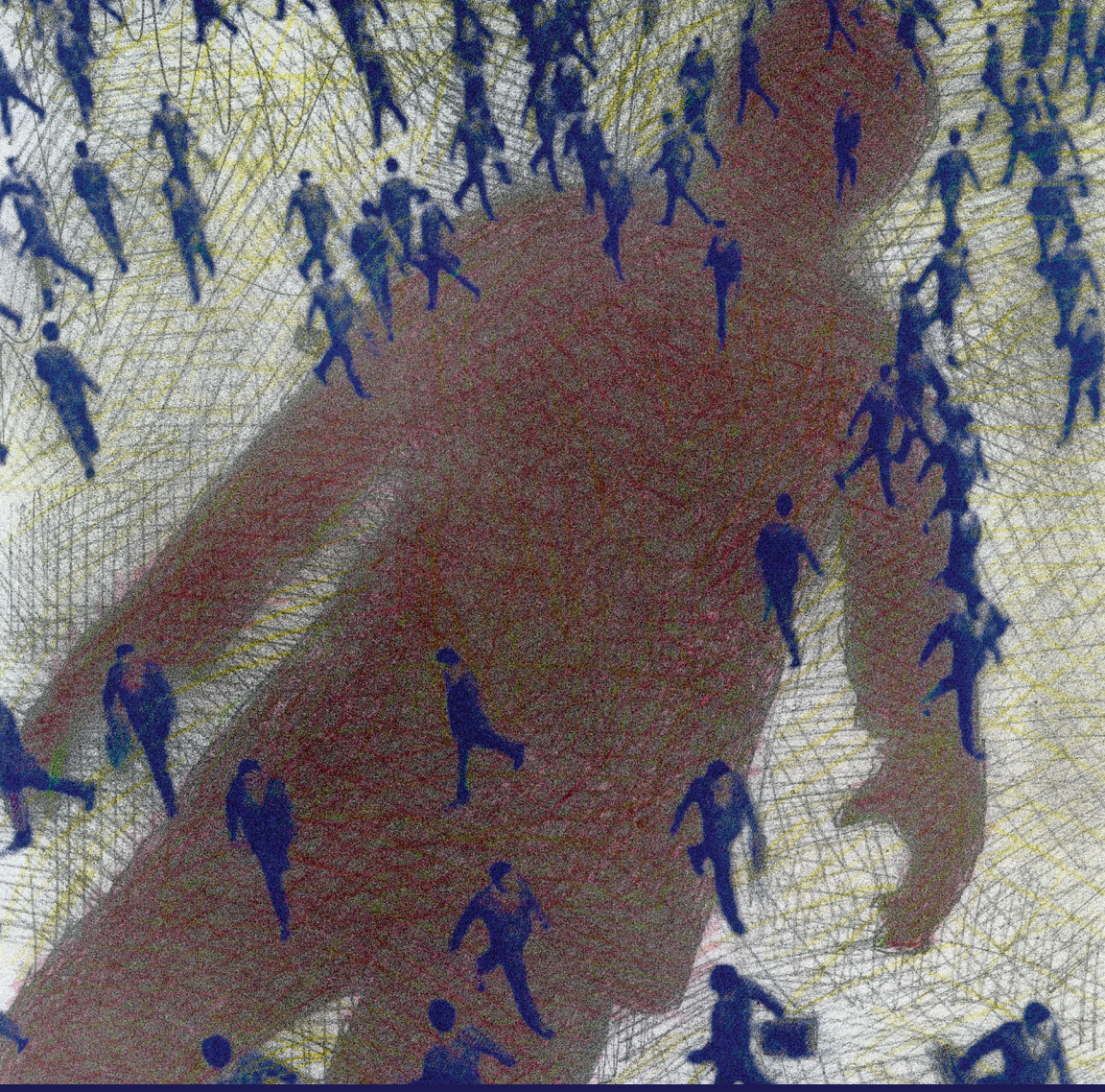

Academics vs. Aliens

Selected Essays on Social Science Research, Defense Education, and the Power of Partnerships

Edited by Gwyneth Sutherlin

COLLEGE OF INFORMATION AND CYBERSPACE
NATIONAL DEFENSE UNIVERSITY

College of Information and Cyberspace
National Defense University

The College of Information and Cyberspace (CIC) educates and prepares selected military and civilian leaders and advisers to develop and implement cyberspace strategies and to leverage information and technology to advance national and global security.

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Contents

In memory of Jericho J. Guzman and his commitment to learning.

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knowledge across disciplines. This project would not have been possible without any of these individuals and teams; it has been the richer for the collaboration.

Introduction

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Defense education has undeniably been at the heart of the Minerva research project, Defense Education Civilian University Research (DECUR) Partnership. Minerva, an organization focused on basic social science research, launched this pilot program in 2019 with the aim to:

> *Improve knowledge brought into the classroom; increase professional military education (PME) institutions' ability to inform and help contribute to civilian social science dialogue; encourage and facilitate better connections across PME institutions for those experts with complementary intellectual and research interests; enhance civilian scientist awareness of critical social science challenges confronting the DOD; and encourage civilian academics to collaborate and engage with PME instructors and their students at PME institutions.*[1]

I was granted one of the partnership's first five awards, titled "Understanding Chinese Influence Operations Through the Lens of Social Movement Theory," which I used to develop a year-long course in which my students at the National Defense University (NDU) would experience all of Minerva's program goals; particularly important to me was placing the students at the center of the project and having them contribute their valuable expertise in shaping the direction of the research, observing the technical aspects of how basic social science is created, and evaluating all the ways it can be integrated into their roles across the government and military.

Fundamental research is unique because it searches for new knowledge rather than applying existing knowledge. The inherent "unknowness" and absence of a certain path to success is daunting. Pursuing and utilizing this research demands creative thinking and agile problem solving. The students who signed up for this class, therefor, were necessarily and undeniably exceptional. They were intellectually curious, brave, and determined to seek out new ideas through collaboration. This is the future of complex problem solving for topics that will rely on synergy between social science insights and technical solutions.

As a joint professional military education (JPME) institution, NDU students are senior leaders coming from across all Services and U.S. Government agencies as well as over 90 ally and partner nations. The national security expertise and experience they bring into the classroom is an incredible resource that was deliberately placed at the center of the research design. Research for national defense is usually created with input from national security experts in partnership with technical experts, rather than in series, with each group of experts working independently—one creating a call for research, one performing the research, and then sending it back to be used by the first group. What if the two groups worked collaboratively from the outset? Or better understood one another's roles and potential? This is the novel approach we took, which benefited all participants, who were able to learn about one another's perspective and priorities. We challenged one another's preconceived notions about how someone in academia or the military might

think about a problem, or even what may be considered a gap in knowledge and the implications of that deficit.

The approach we took for the Understanding Chinese Influence project is called problem-based learning, which places the students at the center of the research. It is a practical approach taken by much professional education, in which future senior decision-makers are trained in the critical thinking skills they will need to solve novel situations, even crises, in their roles as engineers, doctors, and lawyers. They must know how to solve the problem, where to get the information they lack, where to find experts, and how to evaluate and integrate all of this through a framework that starts with a hypothesis. This framework allows practitioners to keep rigorously testing their ideas as their knowledge evolves. Learning in this manner with a host of partners who are experts in many fields is thrilling, but it is also challenging. Everyone speaks a different jargon and wants to pull the project in a different direction.

This approach is in keeping with the most recent Joint Chiefs of Staff guidance, which states that senior PME exists to develop strategically minded joint warfighters with critical thinking skills, the ability to adapt in conditions of disruptive change, and the continuous pursuit of cross-domain excellence.

Senior level military and government officials are trained to be decision-makers, often relying on previous decisions and a large body of information. But in basic research, previous decisions do not exist, and the body of information is limited or can perhaps be incorrectly focused, such as when nuances of culture or language are not considered. While this mismatch can present challenges in the classroom environment, there are multiple advantages to applying problem-based learning for national security professionals. Three examples of benefits include: the development of relevant hypotheses, the application of experience and expertise, and the capacity to capitalize on collaborative efforts.

Developing hypotheses may seem to only be relevant to the academic community. When broken down into its fundamental element, a hypothesis is an if-then query that is tested through qualitative and quantitative methods. Seen this way, however, all decisions are if-then exercises, and a skill much

generalizable to decisionmakers, who must explore possible alternatives and choose the one with the most favorable expected results. Throughout the project students collaborated with senior scientists to develop and test hypotheses that increased their understanding of where and how Chinese Influence could be observed and how we might begin to build new models to recognize cultural dimensions relevant for operations and planning.

Separately, the act of developing interesting hypotheses and research questions that are relevant to national security is uncommon, not for lack of need, but rather because the confluence of allocating time/space for creative opportunities and getting the right people in the room is uncommon. Senior PME institutions are ideally situated to achieve this confluence by bringing together national security experts with academics in an environment ripe for creative work. PME students bring their expertise and experience to the research table, providing scope for the research while academics and other partners bring technical tool sets that provide a different lens or unique testing capabilities to the research.

In the pursuit of cross-domain excellence at the strategic level, senior PME students quickly learn the advantages of collaboration. Prior to senior Service college, military officers may have only had the opportunity to work within their Services. At senior Service colleges, especially at NDU, strategic studies are centered on the continuous integration of national instruments of power and influence, which subsequently requires collaboration across decentralized, federated departments and agencies. Conducting live research reinforces collaboration. For example, problem sets, such as ones focusing on understanding our adversary's framework for influence, rapidly move beyond the scope of one Service or agency and require multi-disciplinary, adaptive approaches in which each participant brings a critical, unique component to the research, much like different colored shards of glass come together in a mosaic to produce outcomes that are greater than the sum of their parts.

That is not to say there are not challenges within this educational model—indeed there are. Some of the challenges include shifting the mental models of students, learning to step through the scientific method collab-

oratively and productively, and finding overlap between student interests and the research topics. The desired shift in mental models is from one that seeks to find answers to one that develops interesting, relevant research hypotheses that do not yet have answers. Being collaborative and productive in applying the scientific method requires taking that mosaic approach of working with collaborative, multi-disciplinary partners who can offer their expertise and tool sets. Becoming comfortable with this approach, however, can be a source of frustration, as is the lack of immediate or concrete results.

Finding a link between the students' educational interests and the research topic requires both independent thought and study and strong communications skills. When done correctly, students build cases that resonate with both national security and academic audiences, all of whom are eager for more.

Because this was the pilot DECUR project for Minerva, we asked each class of students to reflect on their experience. In their roles as rising senior leaders, they were in a unique position to provide their perspectives or even evaluate how the program is poised to meet the goals it proposed. Could it be successful as an educational approach? How does basic social science research fit into their program at this stage? And can it benefit the national security mission? How does the collaborative approach change the way research is designed and executed? How do civilian universities benefit from the collaboration? Does this collaboration spur more creativity among civilian and PME researchers? Is this how we break new ground for hard problems?

The book is divided into two sections of student essays that discuss the main goals of the program: the roles of partnership and social science education in PME. Each section is introduced by a reflection from one of our esteemed partners who worked on the project over the past two years. Eleven masters' students contributed essays informed by their experience that comment on the broader topics of scientific innovation through collaboration, the role of social science research for national security, and how they would like to see PME take creative advantage of programs like Minerva DECUR.

Note

[1] "DECUR Partnership," Minerva Research Initiative, available at <https://minerva.defense.gov/Programs/DECUR-Partnership/>.

Part I: The Role of Partnership and Collaboration in Research

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I am privileged to have been a part of this project since its initiation. As an information operations professional, I am confronted with several challenges in my normal, day-to-day duties. Primarily, due to the tempo of operations, we are unable to perform the depth of research that is so desperately needed in the information environment for our work to be effective. That is why the Minerva DECUR partnership is ideal and, to a point essential, for enhancing the work I do every day in the Department of Defense.

The elective course, "Inside Innovation," at the National Defense University's (NDU's) College of Information and Cyberspace provides a structured way to discuss with students how I can integrate aspects of their work into my planning efforts and, in some cases, into actual operations. The students in this partnership, by offering their own perspectives on the problem at hand, challenge me to consider what I need to ensure mission effectiveness. In addition, those same students take the information from their research and

build a methodology, perform analysis, and present findings that I and other end-users can take forward into our work.

Without this program, I would still be doing my job, of course; however, it would take longer to accomplish the same research. And since in some cases the courses have given me access to the same information and expert-insight the students have enjoyed, this collaboration is extremely beneficial from an operational and strategy perspective. I look forward to continuing to partner with NDU in projects such as this in the future.

Are Facts, Truth, and Trust Passé in the Age of Social Media?

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Is Social Media the Root of All Evil?

A robust national security strategy depends on rigorous social science research in today's globalized world. Nobel Peace Prize–winning journalist Maria Ressa stated, "With no facts, there is no truth, and with no truth, there is no trust."[1] She shared this statement in the context of the proliferation of disinformation, propaganda, and fake news circulating across social media platforms driven by algorithms. Truth has become an enigma, and each of us, depending on our patterns of clicks, is guided to our own sets of facts. Vulnerable Internet users are a click away from sites promulgating radical ideas. Unscrupulous state and nonstate actors operate in the shadows, peddling propaganda to those who want to listen and those who unintentionally visit extreme sites. At the same time, private businesses seek out ways to monetize human behavior. Whether a call to rally or a spiral into the depths of conspiracy theories, the expansion of social media platforms and the power to shape public life—including what content is produced, where audiences go, and what news citizens see—directly impacts national security.[2] The increasing prominence of social media has presented a partnership opportunity

for social science researchers and the Department of Defense (DOD) to collaborate on the future use of information power, an essential prerequisite to understanding and shaping our national security priorities.

How Algorithms Enslave Web Users

An algorithm is a fancy way to describe a set of steps to reach a goal. For social media platforms, it is computer code that synthesizes vast amounts of data to collect, analyze, prioritize, and predict what content you see online. Social media companies closely monitor your electronic footprint. Your clicks, likes, comments, and shares are the data powering the algorithmic engine.[3] Yes, big brother or big "bot" is watching you to push advertisements and content designed exclusively for you. Algorithms decide what highway you drive down, what detours you must make, and what exit you take.

On the surface, it all seems logical. Social media companies are private businesses, and they exist to maximize profitability. Unfortunately, the pursuit of profit is often at the user's expense: "An exposé about YouTube revealed that management ignored warnings from key employees in pursuit of higher engagement and user count, leading to an explosion of hate speech, disinformation, and conspiracy theories."[4] This dark social media path is systemic and results from a business model designed to exploit the worst aspects of human behavior. A 2018 MIT study of controversial stories on Twitter revealed that disinformation and fake news are shared 70 percent more often than factual stories and are spread roughly six times faster.[5]

Companies design algorithms to predict human behavior and guide users through a personalized experience to maximize engagement. This personalized experience shuts out alternative viewpoints and creates a bubble that perpetuates biases, eventually leading users down an even more narrow path by hiding results it predicts users may not like. The system recommends progressively narrower and more rousing content to maintain the user's attention, options become more limited, and user choices can be restricted to increasingly extreme content.[6] Algorithms essentially control what content

you see online, and this is how social media platforms fueled by algorithms become instruments of power.

What Does Your Facebook Page Have to Do with National Security?

As benign as a Facebook page may seem, this platform's influence and messaging power are formidable. You may use your Facebook page to post pictures of the kids for your friends and family network of 100 people. If each person in the network shares your post, tens of thousands of people could view your post within minutes. Now imagine that you are an influential figure with a network of millions of people and your goal is to spread a particular message. That message could quickly reach an audience of people worldwide and could influence attitudes, opinions, and behavior. Information is power and conveying a message to the masses in the blink of an eye is revolutionary.

How this resource is deployed is key to national security. For example, a 2020 United Nations report accused Facebook of enabling religious persecution and ethnic cleansing of the Rohingya minority in Myanmar through online hate speech spread to incite violence and hatred against the Rohingya and other ethnic minorities in the country.[7] The Buddhist majority used the Facebook platform to spread ultranationalist messaging to disparage the Rohingya Muslim minority group. This hate speech triggered physical violence against the Rohingya, resulting in a death toll of 9,000 people from August to December 2017.[8] These events exemplify how bad actors can leverage social media platforms to influence and control human behavior. The role of social media as an instrument of power should pique the interest of national security professionals because of the potential it has to set agendas and influence behavior. Our adversaries have already figured this out.

Russia has been accused of tampering in the 2016 U.S. elections using social media platforms. The Russians waged "what they called information warfare against the United States, with the stated goal of spreading distrust toward the candidates and the political system to engage in a sinister and systematic attack on our political system."[9] China has also leveraged social media

to promote a "wolf warrior" type of diplomatic rhetoric characterized by combative and aggressive social media posts with an eagerness to sow doubt, promote conspiracy theories, and take on the "virtual fight" with those spreading so-called anti-China propaganda.[10] China has established a special office responsible for information warfare within its People's Liberation Army to support these efforts. Clearly, our adversaries understand the power of social media platforms and are already poised for information warfare to promote their concocted version of the "truth." As national security professionals, we must drill down and understand the motivation and mechanisms driving information power that threatens our national interests and security.

How Can Social Science Research Enlighten Us?

The crux of social science research is to understand why humans behave the way they do and unpack the external factors that drive human behavior. The cyber domain upon which social media platforms reside has rendered this continuous search for enlightenment more complex as we seek answers for whether social media causes, or is merely a manifestation of, real-world tensions—or even an amalgamation of both. The digital platform has given us millions of data points to yield information about society through data analysis, and this is where social science and the Minerva Initiative come into play.

The mission of the Minerva Initiative is to build a deeper understanding of the social, cultural, and political factors and dynamics that shape U.S. security interests around the world. The Defense Education and Civilian University Research (DECUR) partnership bridges DOD social science expertise through professional military education (PME).[11] Grants awarded for classes such as "Inside Innovation: Understanding Chinese Influence" promote creative problem solving and innovative partnerships with DOD combatant commands and exemplify the type of critical thinking and novel approaches necessary to formulate solutions to the vast array of challenges threatening U.S. national security. PME students in these classes are national security professionals and bring a unique perspective to academia. For example, these

students can lend their expertise to curate, analyze, and interpret data to inform cross-cultural theory and why it matters to national security. PME students can be a critical resource to help understand our adversaries' behavior and decisionmaking process through data analysis. Such collaborations enable us to explore facts based on scientific research, providing insightful data to our regional combatant command colleagues in U.S. Indo-Pacific Command and others who formulate and execute our national defense strategy.

DOD and Minerva: A Key Collaboration

DOD leadership is committed to working with information experts, data scientists, computer programmers, and basic science researchers and engineers—to use information, not simply manage it.[12] This is a noble goal in today's world, where social media outlets bombard us with instantaneous information on multiple levels. In recent years, social media platforms have gained "knowledge power" derived from the vast amounts of data they have collected, and political actors have begun to use the knowledge power of social media to their advantage.[13] PME students working with Minerva can demonstrate a value-added collaboration by using scientific methods to provide a pragmatic analysis of what this information means and how DOD can incorporate it into real-world strategy. The DOD and Minerva collaboration offers a vehicle for PME students to return to their organizations with a better understanding of the social science behind human behavior, enhancing decisionmaking and strategy formulation.

Conclusion

Facts and truths have become subjective in today's information-saturated environment, eroding trust in the government, media, and fellow citizens. Social media platforms use questionable algorithms to send us down paths not of our choosing, exposing us to potentially harmful content we may never have encountered on our own. These radical, divisive sites and propaganda campaigns have a polarizing and destabilizing effect on civil society, threatening national security. The Minerva DECUR partnership is an innovative

collaboration where DOD can lean on social science research to formulate sound strategies and understand information environments and cultural nuance. The partnership relies on PME students to analyze and synthesize data in meaningful ways to provide more information visibility for DOD end users while training the next cadre of leaders who will understand how to deconstruct and analyze data using social science research models.

Notes

[1] Fareed Zakaria, "The Global Erosion of Fact-Based Journalism," CNN, October 10, 2021, available at <https://www.cnn.com/videos/tv/2021/10/10/exp-gps-1010-maria-ressa-and-amal-clooney-siege-on-truth.cnn>.

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[4] Roger McNamee, *Zucked: Waking Up to the Facebook Catastrophe* (New York: Penguin, 2020), 245.

[5] Ibid., 176.

[6] Allison Zakon, "Optimized for Addiction: Extending Product Liability Concepts to Defectively Designed Social Media Algorithms and Overcoming the Communications Decency Act Comment," *Wisconsin Law Review*, no. 5 (2020), 1129.

[7] McNamee, *Zucked*, 179.

[8] Ibid., 178.

[9] Warren Strobel, Dustin Volz, and Jonathan Landay, "U.S. Charges Russians with 2016 U.S. Election Tampering to Boost Trump," Reuters, February 16, 2018, available at <www.reuters.com/article/us-usa-trump-russia-indictment-idUSKCN1G022U>.

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[11] See Minerva mission statement, Minerva Research Initiative, "DECUR Partnership," available at <https://minerva.defense.gov/Programs/DECUR-Partnership>.

[12] *Summary of the 2018 National Defense Strategy* (Washington, DC: Department of Defense, 2018), 8, available at <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

[13] Schleffer and Miller, "The Political Effects of Social Media Platforms on Different Regime Types."

The Missing Link: Efforts to Increase Collaborative Capacity

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Throughout modern history, militaries have responded to disruptive change by reforming their forces' education and training. Following France's rout of Prussia at the Battle of Valmy in 1792, Gerhard von Scharnhorst led a reform movement that resulted in, among many other things, the founding of the famed Kriegsakademie.[1] After its defeat in World War I, Germany aimed to produce a higher quality force to offset the paltry force levels imposed against the nation. Today, the issuance of The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management, on May 1, 2020, indicates the United States is preparing to follow the road frequently traveled.

The Joint Chiefs' document asserts that the changing character of war requires the Services to profoundly transform how they prepare and educate future leaders at every level.[2] In his War on the Rocks commentary, James Lacey accurately concluded that the Joints Chiefs are directing the implementation of "teaching practices and classroom activities that lie at the heart of 21st-century active learning methodologies but are only rarely seen within professional military education."[3] Lacey's reference to active learning

methodologies establishes a connection with project-based learning, which generally involves individuals or groups collaboratively working to achieve common objectives. The Joint Chiefs' strategy fails to address how it will increase the force's collaborative capacity—a foundational prerequisite for achieving the strategy's larger aims.

To address this gap, the Joint Chiefs should examine the lessons learned from an on-going elective program at National Defense University's (NDU's) College of Information and Cyberspace (CIC). The CIC elective, the result of the Minerva Initiative's Defense Education and Civilian University Research (DECUR) partnership, is a potential blueprint for increasing collaborative capacity and developing more effective strategic leaders. As members of the DECUR partnership, NDU students are collaborating with scientists from the University of Washington, experts in sociocultural analysis, the Department of State's Global Engagement Center, the China Strategic Focus Group, and U.S. Indo-Pacific Command to develop new theories and models for understanding Chinese covert online influence. Throughout the collaborative process, the NDU students have expanded their basis for analyzing security challenges by increasing their awareness of drivers they would not have previously considered (for example, identity theory, social movement theory, cognitive theory, etc.). Although the CIC elective is still in its early stages, initial indicators suggest that the learning model will not only increase collaborative capacity but will also develop better strategic leaders, help to counter stovepiping, and facilitate more effective problem-solving.

The Sum of the Whole Is Greater than the Parts

The characteristics and attributes that are necessary for effective strategic leadership virtually parallel those required for effective collaboration, which are exercised during nearly every elective session. Strategic leaders and effective collaborators must exercise informal authorities, consider stakeholders' expertise and interests, develop a vision, and persuade others to coalesce around the vision to achieve common objectives. In essence, strategic leaders

and effective collaborators both operate in the marketplace of ideas where the possession of emotional intelligence is the coin of the realm.

Academic institutions that provide joint professional military education (JPME) phase II curriculum to senior officers (that is, O-5/O-6/civilian equivalent) are responsible for developing strategic leaders. However, the Joint Chiefs could imbue junior officers with the skills they will need as strategic leaders by expanding the tenets of the CIC elective throughout the force. The most unique and beneficial aspect of the CIC elective is its use of a multidisciplinary approach to problem-solving. This approach has connected the students with external subject matter experts who specialize in social science and behavioral research, computational data analytics, diplomacy, cultural studies, and defense strategy. This approach generates radically new ways to consider problems, consequently demanding that students reconsider many previously held beliefs—a hallmark of critical thinking. For example, the NDU students participating in the CIC elective experienced a true "ah ha" moment when exploring homophily in social networks. The students were shocked to learn that the algorithms driving today's virtual social networks are centered on a theory that was developed in the 1950s to understand real-life social networks. This revelation exposed the vast ground that groups needed to cover to understand Chinese covert online influence.

The complex challenges facing the United States in an era of Great Power competition have sparked renewed interest in speed, agility, efficiency and, most importantly, the elusive whole-of-government approach. Beyond merely preparing individuals to serve as strategic leaders, the CIC learning model will enable organizations to become more effective at getting things done because it shatters artificial barriers that limit collaboration by requiring individuals and organizations to work together to achieve a common objective. As collaborative efforts proceed, those involved will more than likely experience personal "ah ha" moments that will expose the benefits of adopting multidisciplinary, collaborative approaches to solving problems.

Predictably, arguments for achieving a more synergistic, whole-of-government approach to solve contemporary issues center on reforming the U.S.

national security organizational structure. While proposals must be considered on their merits, their initial credibility rests on the extent to which they reduce the complexity of managing an advanced nation's global interests and the persistent presence of organizational self-interest. Given that meaningful structural reform is unlikely, DOD should focus on meeting its statutory requirements to improve collaboration with the intent of establishing enduring relationships with private organizations and academic institutions at every level.[4]

The imperative to fully leverage U.S. resources and expertise (that is, achieve a more effective whole-of-government approach) acknowledges that legacy approaches to problem-solving are ill-suited for addressing today's complex, dynamic challenges. According to Dr. Laurie Miller Nelson, collaborative problem-solving "is most appropriate when there is not a single answer to a question or best way of doing something, but rather when the nature of the task varies considerably from one situation to another, or when depth of understanding is desired."[5] The circumstances in which Dr. Nelson recommends using collaborative problem-solving are virtually synonymous with the characteristics of the contemporary national security landscape. Given these similarities, DOD must begin to develop collaborative capacity in individuals at the earliest stages of their careers. As a critical first step, governmental organizations must develop doctrines that direct integrating relevant external agencies into planning efforts and remaining joined throughout the conduct of activities.

Conclusion

As the United States prepares to compete in the Great Power competition that characterizes the contemporary strategic landscape, the Joint Chiefs' initiative to reform the U.S. military's JPME system is logical and justified. With this said, the Joint Chiefs should start by increasing the ability of individuals, groups, and organizations to collaborate across organizations and disciplines, because technical and highly complex challenges demand this competency. The CIC elective being offered at NDU under the auspices of the DECUR

partnership stands as an example of how the Joint Chiefs could develop this competency throughout the force. Through the CIC elective, NDU students are working with scientists in academia and experts across a wide variety of disciplines who are assigned throughout the interagency to develop new theories for understanding Chinese covert online influence. Throughout the processes, students are not only learning to become more effective at collaboration but are also becoming more capable strategic leaders.

Notes

[1] James M. Liepman, *The Prussian Reform Movement: A Case Study in Defense Reform* (Monterey, CA: Naval Post Graduate School, 1989), available at <https://apps.dtic.mil/dtic/tr/fulltext/u2/a218326.pdf>.

[2] James Lacey, "Finally Getting Serious About Professional Military Education," *War on the Rocks*, May 18, 2020, available at <https://warontherocks.com/2020/05/finally-getting-serious-about-professional-military-education/>.

[3] Ibid.

[4] *Defense Management: More Progress Needed for DOD to Meet Outstanding Statutory Requirements to Improve Collaboration*, GAO-20-312 (Washington, DC: Government Accountability Office, January 30, 2020), available at <https://www.gao.gov/products/GAO-20-312>.

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The Convergence of Strength: Combining the Best of Academia and Government

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We have seen it from Hollywood many times before. The story arc of a summer blockbuster movie involves stopping a monster from devastating a city or repelling an alien invasion. To accomplish their formidable task, the protagonists must combine an academician's brain with the military's brawn to save the world. Clearly, this is a perfect partnership.

The National Defense University (NDU) is taking this partnership one step further by presenting students poised to become future leaders with wicked problems researched at leading universities. This collaboration effectively integrates the military into the cutting-edge research at the ground floor, ensuring the critical conversations occur before the hypothetical aliens reach the planet. As one of the students involved with this research study, I will share my experience partnering with data and social scientists in the College of Information and Cyberspace (CIC) electives. I will present the benefits of these collaborations, the process of starting the project, and the expected outcomes.

Starting with Why

Academia has worked with the Department of Defense (DOD) for decades, and engaging with the students of a professional military education institution builds synergistic collaborations. This partnership can produce several benefits for both the military officers and the agency civilians involved. First, military scholarship is often discounted as a hobbyist activity and is not taken seriously by those more credentialed in the field. The Carnegie Endowment for Peace has found that "academics have rigorous training in research methods and relevant theories, and their independence lends credibility to their findings."[1] Second, the military course of study—often just one year—is short by collegiate standards. Linking NDU with a program of study from a major university can provide continuity for the research. Finally, one of the primary goals of NDU, as stated by the Chairman of the Joint Chiefs of Staff, is building an "atmosphere and culture that encourages intellectual curiosity, [and] stimulates critical thinking."[2] The CIC elective provides students with a multidisciplinary approach to critical thinking and problem solving.

There are clear benefits for the academic side as well. One of the primary advantages of joint sessions with NDU is access to the experience and diversity of its student body. NDU scholars come from all military departments as well as more than 25 government agencies and industry partners. Tapping into this diversity of thought, culture, and experience can uncover new and profound insights. Additionally, military academic support comes as free labor for the research team, significantly benefiting organizations with thin budgets. These collaborative efforts provide both actual research value to academia and valuable education for the students of NDU.

Building the Process

The CIC course started building a framework early by discussing the research project's context, methods, and goals. U.S. Indo-Pacific Command and the Minerva Project sponsored a two-year research plan beginning in 2021 focused on analyzing Chinese influence. One advantage the 2022 academic year team has is building upon work started by the previous year's

team. Building teams between institutions can be a difficult task due to conflicting cultures and interests. In a study of building government and university partnerships, the Institute for Defense Analyses (IDA) stated, "Successful partnerships start small and take time to develop."[3] Leveraging the foundation laid by the previous year's group—seeing examples of their work and discussions with members from the University of Washington (UW)—has already been beneficial for us.

The next step of the project is the discovery of assets the teams possess and areas for improvement. A benefit for the students is learning critical multidisciplinary skills, while an advantage for the university is tapping into the students' experience. The IDA study also reported participants "from both universities and DOD . . . said that the status quo could be improved by increasing mutual awareness of [student] and university research strengths."[4] The class has had some initial data analysis exercises and introductory discussions with UW scholars. These activities have helped to understand what tools and skills academics bring to the table and how our experience and research will improve the project.

Great Expectations

I look forward to building a greater understanding and appreciation of research art during the academic year. I have an inherent curiosity about influences exerted through hard and soft powers by foreign governments. I have been significantly affected by the study of data for this project. Focusing on the nuanced differences of Chinese culture from our own has given me a greater appreciation for this multipolar competition. Understanding our similarities and differences provides a complete outlook on our national interests and strategies. I look forward to building some empirical knowledge of how that influence is formulated and applying measures of effectiveness on world populations. The world is slowly becoming conscious of authoritarian governments' impact on local politics and elections.[5] The evidence indicates that influence operations around the globe are continuing and expanding.

Having that first-hand, research-based knowledge of these operations and their effects will be a critical tool as a senior leader.

Conclusion

Before the aliens land and the monsters ravage the city, DOD must proactively build partnerships with academic institutions. As we work on the Minerva-sponsored project, it becomes more apparent that the foe we are facing might be our own understanding of the strategic environment. Improving our academic collaborations ensures that the best information, data, and analysis are in the hands of senior strategists and policymakers before a critical moment. NDU students, educational institutions, and warfighters benefit from these early collaborations by sharing resources, credibility, and experience. The foundations of the CIC/UW partnership in the Minerva Project are strong and have set up incoming groups for success. I am optimistic about our ability to produce guiding research and actionable information for national leaders.

Notes

[1] Jacob N. Shapiro, Natalie Thompson, and Alicia Wanless, "Research Collaboration on Influence Operations between Industry and Academia: A Way Forward," Carnegie Endowment for International Peace, December 3, 2020, available at <https://carnegieendowment.org/2020/12/03/research-collaboration-on-influence-operations-between-industry-and-academia-way-forward-pub-83332>.

[2] *Developing Today's Joint Officers for Tomorrow's Ways of War: The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management* (Washington, DC: The Joint Staff, 2020).

[3] Nayanee Gupta et al., *Research Collaborations Between Universities and Department of Defense Laboratories* (Alexandria, VA: Institute for Defense Analyses, July 31, 2014), iii, available at <https://www.ida.org/research-and-publications/publications/all/r/re/research-collaborations-between-universities-and-department-of-defense-laboratories>.

[4] Ibid.

[5] Leonid Peisakhin and Arturas Rozenas, "Electoral Effects of Biased Media: Russian Television in Ukraine," *American Journal of Political Science* 62, no. 3 (2018), 535–550, available at <https://doi.org/10.1111/ajps.12355>.

Toward a Holistic Understanding in the Age of Convergence

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American and United Kingdom forces invaded Iraq on March 19, 2003, in Operation Iraqi Freedom and quickly removed Saddam Hussein's regime from power. Despite the restoration of Iraqi sovereignty in June 2004 and the election of a new Iraqi government in 2005, Iraq's internal conflicts only grew stronger. By the beginning of 2006, Iraq was on the verge of civil war due to terrorist attacks by al Qaeda in Iraq, and Sunni insurgents combined with sectarian violence fueled by Iranian-sponsored militias. Thus, U.S. and coalition forces in Iraq faced the daunting challenge of defeating a lethal insurgency in 2006. Against formidable odds, U.S. and coalition forces developed and implemented a new approach in which they protected the Iraqi population, gained its trust, and ultimately re-seized the initiative from the enemy by 2008.[1] Foremost in this reversal was an effort, led by U.S. Army General David Petraeus, to make a wider, more holistic examination of the situation in Iraq. Out of operational necessity and acceptance that the problem set required nuanced perspective from experts in disciplines such as social science and history, Petraeus convened a group, consisting of civilian academia, journalists, human rights advocates, and military, in February 2006 to

collaborate on what was then U.S. counterinsurgency doctrine. This diverse and innovative meeting of the minds would prove to be one of the most pivotal events of the war leading to the release of new U.S. counterinsurgency doctrine in December 2006. This year-long collaboration leveraging broad perspective and expertise from outside the U.S. Department of Defense (DOD) enabled the military to gain a better appreciation of the operational environment and basis for future action.

As in 2006, the strategic and operational environment today is just as complex and demands innovative multidisciplinary research and collaboration. For example, replace Iraq with China and Russia and insert the term "Great Power competition" in place of "insurgency."[2] Great Power competition entails an avoidance of direct armed conflict, or a limiting of conflict in both scope and duration, to achieve a position of strategic advantage. While Russia and other adversaries are notable competitors, China presents the most enduring strategic challenge and is most likely to reach military parity with the United States, aiming to supplant it globally by 2040.[3] Inherent in this competition is the struggle for influence, often through information means. Thus, understanding Chinese behavior in terms of intent and motivation is at the heart of future inquiry. What do Chinese actions in cyberspace mean? How are they attempting to influence? These questions are among the many that DOD is attempting to answer through its Minerva Initiative. Established in 2008, Minerva is a university-based basic social science research initiative that aims to draw upon the knowledge, ideas, and creativity of the nation's universities to expand the base of expertise that DOD uses to formulate national security policy and strategy.[4] How does DOD leverage the information and knowledge from Minerva to inform both short- and long-term decisionmaking from the tactical to the strategic level? This last question is what this paper will focus on in terms of how DOD operationalizes Minerva given future Great Power competition.

Minerva has a unique role in enabling holistic understanding through data contextual accuracy. While joint all-domain operations (JADO) emphasize speed and breadth of data flow and analysis, data accuracy cannot be

forgotten. Furthermore, contextual accuracy based on a thorough understanding of the operational environment is paramount to negate ill-advised decisionmaking. JADO strives to leverage artificial intelligence and machine learning to speed up the human decision cycle. This seems reasonable, but the solution is only as good as the data is complete and relevant. Take for example, an algorithm that signals aggressive Chinese behavior based on U.S. signals intelligence intercepts. In this case, it is imperative that the algorithm be contextually and culturally informed to the greatest extent possible; otherwise, the United States risks erroneous action. This is where Minerva comes into play: it closes the gap in achieving an algorithm that is comprehensive and reliable. Additionally, the algorithm must fit within the JADO architecture and data standards—hence, the operational imperative for Minerva to widen its aperture.

Acknowledging that the project's understanding of Chinese influence analytics is relatively immature, now is the time to carve out where and how Minerva will fit into DOD's future approach to data. While some may argue that this is putting the cart before the horse, it is imperative to concurrently lay the groundwork now so that research and development can efficiently and effectively be actioned operationally without delay. In fact, data architecture development is currently ongoing across the DOD enterprise. This data architecture will provide the framework upon which eventual Minerva concrete outputs will rest as parts of a data constellation giving DOD an upper hand in global decisionmaking. Creating data advantage, as emphasized by the current Deputy Secretary of Defense, is "critical to improving performance and creating decision advantage at all echelons from the battlespace to the board room, ensuring U.S. competitive advantage."[5] Logic holds that by leveraging technological convergence enabled by artificial intelligence and machine learning, the U.S. joint force will have ubiquitous access to data across all domains, with all DOD data being "visible, accessible, understandable, linked, trustworthy, interoperable, and secure."[6] It stands to reason that, with DOD data standards and architecture coming of age, Minerva must expand its aperture to account for this effort to ensure future practical applications are op-

erationally relevant. Thus, this paper supposes that through in-stride research and development in concert with DOD's JADO effort, Minerva will achieve the greatest return on investment in terms of being operationally relevant and contributing to a joint force that embraces a multidisciplinary collaborative mindset.

Thus, as already alluded to, holistic understanding that captures the underlying complexities of humans is paramount in developing relevant and effective action in the strategic and operational environment. Perhaps one of the greatest examples of this dynamic occurred in the early 1900s when British army officer T.E. Lawrence, who later became known as Lawrence of Arabia, immersed himself in the Arab culture, fighting with the Arabs against the Turks, to situate his appreciation for them as a people and for the problem in general. While it is somewhat unrealistic for practitioners of today to be T.E. Lawrence on the frontlines of China influence in cyberspace, the necessity for holistic understanding still holds true and demands innovative means to close the gap in understanding. The Minerva initiative is ambitious and can prove to be as relevant as the counterinsurgency doctrine collaboration of 2006 and the cultural immersion of T.E. Lawrence in the 1900s, if given time, resources, and mindset.

Notes

[1] Shawn M. Bault, *Beauty Is in the Eye of the Beholder: A Tale of Strategic Context and Operational Art in Iraq, 2004–2008* (Fort Leavenworth, KS: U.S. Army School of Advanced Military Studies Monograph, May 11, 2012), 2–4.

[2] *Interim National Security Strategic Guidance* (Washington, DC: The White House, March 2021), 6. *Great Power competition* is described as "a world of rising nationalism, receding democracy, growing rivalry with China, Russia, and other authoritarian states, and a technological revolution that is reshaping every aspect of our lives."

[3] Army Multi-Domain Transformation, *Ready to Win in Competition and Conflict*, Chief of Staff Paper 1 (Washington, DC: Department of the Army, March 16, 2021), 3.

[4] U.S. Department of Defense, Minerva Research Initiative Web site, available at <https://minerva.defense.gov/>.

[5] Deputy Secretary of Defense Kathleen Hicks, "Creating Data Advantage," memorandum, May 5, 2021.

[6] Ibid.

Basic Social Science Research and Project-Based Learning for Strategic Leaders

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Friends from the press, China needs to learn more about the world, and the world also needs to learn more about China. I hope you will continue to make more efforts and contributions to deepening the mutual understanding between China and the countries of the world.

—Xi Jinping

My introduction to CIC-6044, "Inside Innovation: Understanding Chinese Influence," at the National Defense University (NDU) was a very interesting explanation of basic social science research and project-based learning. I had just come from U.S. Indo-Pacific Command (INDOPACOM) where I was already very familiar with the interested stakeholders and research topic but not with the methodologies to be used. Nor was I familiar with the Office of the Secretary of Defense's Minerva Research Initiative (OSD Minerva), which funds the research.[1]

Although how we would conduct the research was still unknown to me, its uniqueness, challenging nature, and relevance to Great Power competition was irresistible. We would be developing foundational questions to

identify previously unknown Chinese influence operations and the online social media ecology that is used to communicate these messages. It seemed to be an outstanding option in the development of strategic leaders. Strategic leaders will frequently encounter problem sets that have no precedent or historical analytical frameworks. This course provides direct experience in conducting such problem-solving and could provide new attack vectors for the Great Power competition against China.

Basics Research/Initial Methodologies

Our faculty, Dr. Sutherlin and Research Fellow Vern Wendt, used the first few sessions to introduce us to self-tests on how we communicate and acquire knowledge. The research questions we were answering focused on developing models and methods for understanding covert Chinese online influence. We started by asking ourselves, how do we know what we do NOT know? We next studied the concept of homophily (the tendency for people to seek out those like themselves) in social networks. We were also exposed to memory and schema across cultures, human inference, hypocognition (missing and being unable to communicate because there are no words for certain concepts), and how communication changes based on which social ecology (social media/online) tool was used. This was important because past untested social science research informs today's social relationship algorithms. At the end of our session, Dr. Sutherlin provided us with a dataset from NDU's Center for Chinese Military Studies to tie our current studies to the type of venue in which we would eventually focus our efforts.

Initial Online Methodologies

For our next session, we were exposed to social media research methodology of online hate groups. This research impressed our sponsor, OSD Minerva. We learned which top social media platforms were used by U.S. hate groups to form online communities. Those online communities were further divided into recruiting and radicalization platforms. Lastly, we discussed the strengths and weaknesses of these methods such as the groups communicating

in a common language and similar cultures. We are then asked if this research would influence how we approached our own research. Although this further advanced our understanding, how we would frame our research was still far from clear. But the next session proved to be the pivotal session to shed light upon our potential research ideas.

Department of State's Global Engagement Center

In our second to last session, we received an incredibly insightful briefing from Dr. Whiting, chief of the China section of the U.S. State Department's Global Engagement Center (GEC), which generated significant ideas from all attendees. This was a key event in our search for a research methodology. Both our class and the CIC-6004 Influence Warfare class attended. Both groups contributed greatly to the event and to mutual understanding of our class learning objectives. We learned the goals, structures, and activities of the GEC regarding China. We also learned that the GEC has liaison officers with private sector entities, combatant commands, the Intelligence Community, and other non-DOD parts of government. China's most effective means of influence were state-sponsored news and official spokespeople. Their current methods were initially modelled on Russian propaganda operations but have since evolved. Like Russian propaganda operations, Chinese influence operations started by condemning the Western way of life and exporting the rhetoric of revolution, particularly in the lesser developed countries. The Chinese soon discovered that this line of effort was not conducive to their development. It manifests now as messaging about the benign nature of their economic diplomacy and their importance in the World Trade Organization.

The GEC also showed us their success stories regarding countering Chinese influence regarding topics such as COVID-19, Xinjiang, and predatory financing. These are China's most aggressive topics in influence operations. The GEC was generous with their time as they answered every question posed by students. During these exchanges, it became clearer which questions we should be asking to frame our research—for example, I asked how they identified Chinese influence operations when the messaging was not in

Mandarin and was communicated on a non-Chinese social media site. The GEC's success stories were a guide to what they have already identified and areas in which they did not need further help. They also specified that we did not need to ask how to counter Chinese influence because they had full staff to deal with counter-malign influence design. They need assistance on what threats they had not detected on previously unknown social media ecology. Based on Xi Jinping's quote above, China will continue to message on all media available, online and offline, to reinforce their positive messaging, particularly in lesser developed countries where their economic incentives will be most effective, and to counter negative impressions, primarily in more developed countries where they are experiencing the most failure in their influence operations. We needed to apply our creativity with this perspective in mind. It was clear our class had turned a corner.

Post-GEC Class Session

In our latest session, Dr. Sutherlin asked for our questions, comments, and ideas regarding the GEC session and our Chinese military diplomacy dataset. Armed with our new insights, the students' inputs were focused on modes of online communication, which cross-cultural communications theories were more relevant, and Chinese language learning research. We related our comments to our individual domain expertise (such as Joint Staff, Intelligence Community, INDPACOM, combat experience, etc.) and constructively commented on fellow students' input and benefits to stakeholders such as USINDOPACOM, U.S. Africa Command, and U.S. Special Operations Command. We were developing the mindsets to continue the project to its next evolution. Our next sessions would continue to develop our basic social science research skills and problem-based learning as strategic leaders. It was more obvious how this would develop us as strategic leaders in the age of Great Power competition.

Developing Use-Cases and the USINDOPACOM Perspective

After the GEC briefing, we divided into our problem teams. I joined the Belt and Road Initiative (BRI) Team with a senior foreign service officer. We discussed our ideas on potential sources of Chinese influence and their respective social media ecology. We still made the mistake of trying to solve the problem of countering Chinese influence instead of developing ideas on news sources of Chinese influence, but we corrected ourselves by discussing what we learned from the previous sessions. We refocused on potential unknown sources of Chinese influence that we had already reviewed individually. Most prominent were the BRI and Chinese technology-firm related sources.

China's most successful influence messaging has been related to their economic assistance to lesser developed countries. As per Xi Jinping's intent, they would take advantage of that success to ensure the world understood China as it preferred to be seen. One potential set of undiscovered social media ecology are legal, investor, product, and general business data available on Chinese technology firms' Web sites and their respective communications to non-Chinese audiences. These sources could telegraph messages about the advantages to taking economic assistance or using Chinese products that may be related to BRI. China would use the same messages to refute Western criticisms of BRI and/or Chinese technology products such as 5G or smart city technologies. We had not seen evidence that those sites were previously identified as part of the online social media ecology of Chinese influence. We felt we were continuing the right path after the USINDOPACOM J9 briefing/Q&A.

The USINDOPACOM J9 representative was from his outreach team. He was supplemented by a USINDOPACOM J39 information operations officer so they could provide complete answers to students' questions. The USINDOPACOM representatives communicated their focus on solving the problem: countering Chinese malign influence. They stated their challenges particularly with the amount of data that overwhelmed the J39 staff. They relied on the USINDOPACOM J2 staff to wrestle with that problem. For the "Inside Innovation" students, our faculty needed to explain our research

focus. The USINDOPACOM representatives eventually understood and stated there would be value in identifying previously unknown nodes in the social media ecology. When we presented questions on cross-cultural communications research, the J39 representative believe that would be a useful vector to highlight in the future, although they had not thought about this problem. But they had hoped that the senior strategic leaders' perspective we could bring could clarify how they could take advantage of our research. With this validation, my partner and I believed we were still on the right track and just needed to check ourselves when we wandered into the "solving the problem/countering Chinese influence" lane. We discussed how unique this type of problem-solving was in our individual development—in particular, the experience of being given a problem with no prior example of how to solve it and developing new solutions. This would be invaluable as future strategic leaders in the national security space who are operating in an environment inundated with Chinese influence messaging.

Note

[1] Minerva Project Initiative Web site, available at <https://minerva.defense.gov/>.

Part II: The Role of Social Science in Professional Military Education

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Social science deals with the institutions and functioning of human society and the interpersonal relationships among members of society. As such, it is a useful tool to analyze and understand the situations and operating environments the U.S. military encounters on a regular basis. The teaching of social sciences within courses at professional military education (PME) institutions fits squarely within those institutions' mandates to better prepare their military students with sophistication in analytical tools and the decision-making skill they will need to accomplish their missions.

The essays in part II capture the thinking of these students regarding the strategic issue of Chinese influence operations. The students have used their educational preparation in the social sciences to better understand and model their chosen operating environment. This has made them better prepared to first conceptualize and then formulate their own understanding of their chosen strategic issue area and to create the foundation for students who will follow them on this project.

The National Defense University has a mission to prepare all its students, and particularly those in active military Service, to understand aspects of society and human relations they do not normally experience first-hand as career military professionals. Such areas include but are not limited to economics, politics, governance, sociology, and business. Whether these students go on to work in the Pentagon making decisions or supporting decisionmakers or are tasked to manage social and cultural relationships wherever they are called upon to serve around the globe, they will draw upon the tools and techniques they developed during their PME. Though combat is the military's primary purpose, the actual time students are likely to spend in combat will prove short compared to the time they are called upon to assess and work within social institutions and manage animating human relationships of those institutions. The teaching of these skills with the goal of developing the necessary aptitudes is an essential task for the military preparedness of all PME students, especially at the senior Service college level, allowing them to achieve their military mission and secure America's global interests.

A Case for Basic Research in Professional Military Education

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The rush from counterinsurgency to strategic competition has left many defense practitioners grasping for solutions to problems they have yet to define. The historically minded are looking to past hegemonic conflicts to find lessons with modern applicability. The technically minded are looking to innovation, evangelizing the decision advantages that result from automation and artificial intelligence. Few are investigating the objects over which the strategic powers are competing, how their views of these objects differ, and what therein might be threatening. This article describes one National Defense University (NDU) effort to examine these understudied areas, why they are important, and how the rest of the Department of Defense (DOD) might learn from NDU's experience.

What NDU Is Doing

NDU's "Inside Innovation: Practical Research Skills for Information Warfare" course provides an opportunity to go beyond the normal profession military education curriculum to conduct basic level research into subjects at the heart of U.S.-People's Republic of China (PRC) competition. The

course emerged from a grant from the Undersecretary of Defense for Policy Minerva Project for social science research and U.S. Indo-Pacific Command requirements to better understand PRC malign influence operations. These sponsors posed four research questions regarding the nature of PRC influence, the ecology of information environment platforms used for influence, the cross-cultural differences that affect U.S. and PRC interaction, and the ability to model influence activity. Students interact with academics and practitioners across the U.S. Government and, depending on their specific line of research, may extend that collaboration even further.

To investigate the cross-cultural differences, one research team identified four concepts that appear central to U.S. and PRC competition: sovereignty, legitimacy, prosperity, and time. They drew these concepts from literature reviews on the sources of U.S. and PRC strategic disagreement. The students then designed a data-gathering plan that centered on interviews with Chinese citizens, Taiwanese citizens, first-generation Chinese immigrants to the United States, and Singaporean citizens of Chinese cultural heritage, wherein the researchers would seek to isolate uniquely Chinese features of those four concepts. Once described, the students plan to identify events in the Asia-Pacific region that involve the four concepts, make predictions on PRC behavior in response to those events, observe actual behavior, and then describe the difference between the predictions and differences. The hypothesis is that the uniquely Chinese concepts of sovereignty, legitimacy, prosperity, and time will predictively determine Chinese action, and the extent to which those cross-cultural concepts differ with their U.S. counterparts will predictively determine U.S. Government concerns.

Why This Is Important

This NDU effort is important for two reasons. First, basic research is critical to advancing knowledge. With its focus on understanding phenomena at their most fundamental levels, it holds the possibility of functioning as the proverbial flap of a butterfly wing that sets in motion cascading events culminating in a hurricane of powerful implications. In the case of the NDU

study, students seek to discern whether seemingly small cultural differences in the most fundamental concepts of sovereignty, legitimacy, prosperity, and time might hold some responsibility for the hurricane-level geopolitical outcomes of U.S.-PRC competition. Should the results affirm the students' hypotheses, their findings may spur follow-on efforts that could result in higher efficacy competition policy or strategies. And, should the results refute their hypotheses, their findings may indicate more lucrative areas. In either case, knowledge in the critical area of U.S.-PRC competition will advance.

Second, the course provides a two-way opportunity for security researchers and practitioners. For their part, researchers gain access to the accumulated experience of security practitioners from a cross-section of Services and specialties. Security practitioners, on the other hand, gain the opportunity to study fundamental security phenomena through the processes of experimental inquiry, a skillset whose practice is critical to leading innovation. Further, as professional researchers know, there are three things that make new research valuable: if the researchers have access to new data or to new experimental methodologies, or if they develop new hypotheses that withstand the previously unexplained data or experimental results. By opening NDU curricula to basic research under the guidance of professional researchers, the university diversifies the security researcher base and increases the probability of accessing new data, methodologies, and hypotheses.

What DOD Might Do

While the ongoing research cited above has yet to bear fruit, DOD should consider two implications of its likely success. First, investments in fruitful research require genuine application. Under ideal conditions, NDU's research would be highly relevant to the most critical issues in DOD, and its results would provide compelling reasons to make changes to existing policy, strategy, plans, operations, assessments, force structures, processes, and so forth. In such a scenario, NDU research would be critical to innovation, especially during times when DOD is adapting to shifts in strategic direction. To realize this ideal scenario, DOD leaders must be willing to support NDU

with funding and direct senior leader engagement. Research opportunities such as the "Inside Innovation" course cannot be relegated to the status of a mere "measure of performance" on one office's long list of efforts that it is loosely observing from afar with no genuine intent to pursue or apply its findings.

Second, courses such as this demonstrate that professional military education can also modernize for increased efficacy. Intermediate and senior professional military education provides a fleeting opportunity to the U.S., allied, and partner students that attend and, ideally, continue to serve in increasingly influential offices for years to come. However, the one-year courses traditionally follow curricula that swiftly survey history and concepts and then evaluate student application thereof in rote papers and projects. So, while students are encouraged to develop new ideas in their assignments, such intent is impractical due to requirements to apply the issued data, methodologies, and hypotheses. Research courses, on the other hand, can break this mold by engaging students in genuinely creative and critical thinking that can contribute new ideas to interested research sponsors.

A Practitioner-Centric Approach to Making Sense of Chinese Influence

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Making sense of Beijing's behaviors and how it exerts influence at home and abroad is a worthy cause at a time when China, according to the 2021 Interim National Security Strategic Guidance, "has rapidly become more assertive" and "is the only competitor potentially capable of combining its economic, diplomatic, military, and technological power to mount a sustained challenge to a stable and open international system."[1] Understanding China's influence across the globe requires transcending the boundaries of Western-centric social science and leveraging or developing new approaches unfamiliar to social scientists who are trained in methods and theories grounded in the West. Moreover, current data collection tools and algorithms used to gather and analyze information about China may be limited in their abilities to fully understand how Chinese influence works, considering that, according to some researchers, "Chinese realities generally run counter to Western theoretical expectations."[2] If words and people matter, one must account for the fact that China is a land steeped in history, culture, and languages that have no underpinning in the Judeo-Christian, Indo-European, and Caucasian worlds. We also must consider the

possibility that the constructs, paradigms, values, and priorities that explain them are limited in their abilities to help U.S. Government national security practitioners understand Beijing's behaviors. At National Defense University (NDU), professional U.S. military and civilian government students are working with U.S. Indo-Pacific Command (USINDOPACOM) to do just that—understand Chinese influence from a Chinese, rather than a Western, perspective—in a creative and collaborative environment that promotes research over textbook-styled learning.

Professional Military Education

"Inside Innovation: Understanding Chinese Influence," a unique elective course offered at NDU's College of Information Cyberspace, allows students to tackle Chinese influence from a research-based approach to learning. The two-semester course sequence helps bridge the gap between mainstream pedagogical approaches to professional military education and the real-world demands of U.S. combatant commands, whose mission sets require that warfighters go beyond the boundaries of existing tools and technologies typically employed to process information and understand influence. The course is a cross-disciplinary initiative between U.S. Government national security practitioners from across the interagency community, private American universities, and USINDOPACOM, supported by a grant from the Office of the Secretary of Defense's Minerva's Defense Education and Civilian University Research Partnership research award.

In the 2021–2022 academic year, students deliver research outcomes for USINDOPACOM that describe operations in the information environment that consider U.S.- and Chinese-based digital platforms, relevant actor networks, and online and offline event timings that convey Chinese strategic decisionmaking perspectives. Considering China's threat to U.S. and allied interests in the region, students' research is as insightful as it is valuable to the government. Students use collected data sets to better understand cross-cultural variation between concepts, words, and paradigms such as "sovereignty," "prosperity," and "time," and understand how they may differ in a

Chinese context. The students' professional backgrounds range from Chinese studies and strategic communication to military intelligence collection and analysis, counterintelligence, and high-performance computing, demonstrating the range and breadth of professional expertise and perspectives being applied and otherwise not employed in similar projects. In this sense, USINDOPACOM is getting a national security practitioner's perspective rather than a purely academic one.

Understanding Influence

Influence is, essentially, the application of psychology to individuals and groups to produce changes in their behavior that are favorable to the person or organization responsible for doing the influencing. Tactics and tools for influencing populations are arguably as old as civilizations themselves. However, today's tools for conducting "information warfare" include mass media and Internet-based social media platforms unavailable in past centuries. Understanding the premises upon which data gleaned from such tools rests and the assumptions attached to information produced is critical. NDU students are attempting to understand Chinese cultural perspectives embedded in source material and discern the intention of messages communicated. Their work is both relevant and timely for USINDOPACOM, considering the 2018 National Defense Strategy Summary calls out China for "leveraging military modernization, influence operations, and predatory economics to coerce neighboring countries to reorder the Indo-Pacific region to their advantage."[3]

In September, Beijing rolled out a new buzzword, "common prosperity," which has since been injected into General Secretary of the Chinese Communist Party (CCP) Xi Jinping's speeches as he works to narrow a wealth gap that some say could slow China's rise and threaten the legitimacy of Communist Party rule.[4] What students are trying to determine is what the CCP means by "prosperity" in a Chinese cultural context and how the CCP communicates it. According to Baidu.hk, China's home-grown version of Wikipedia, "prosperity" means "flourishing, brisk, blooming, thriving,

also referring to the vigorous development of an economy or business"[5]—a definition not all that different from the word's English connotation. However, attributes attached to the word differ significantly between cultures. For Americans, prosperity is correlated to "liberty,[6] whereby the former desiderata flow from the latter. Thomas Jefferson said prosperity is a result of a government that, among other things, leaves people "free to regulate their own pursuits of industry and improvement."[7] However, in China, liberty is not viewed as a prerequisite for prosperity. Contemporary policies associated with it include crackdowns on excesses in industry and, for example, limits on the hours that technology sector employees can work.

Conclusion

Understanding the sociocultural context in which information is transmitted, such as Chinese history and politics, is necessary to make sense of Beijing's policy moves. If the U.S. Government is to devise effective strategies to counter Chinese influence, an actor-centric, culturally informed perspective is required. Western-based approaches to social science have limited abilities to understand a country and a people vastly different from the United States and the American people. "Understanding Chinese Influence" is a rare opportunity for mid-career U.S. national security practitioners to collaborate across the interagency to make sense of data about China and apply cross-cultural perspectives that can, in turn, be used for national security purposes.

Notes

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[3] *Summary of the 2018 National Defense Strategy of the United States of America* (Washington, DC: Department of Defense, January 2018), available at <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

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[6] Kim Holmes, *Understanding American Prosperity* (Washington, DC: The Heritage Foundation, November 29, 2012), available at <https://www.heritage.org/international-economies/report/understanding-american-prosperity>.

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"Failure Is an Option Here"

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Failure is an option here. If things are not failing, you are not innovating enough.

—Elon Musk

Some of the most interesting moments in life occur when our original plans go awry. Everyone has a story about getting lost on the way to a destination or getting rained out, only to marvel at the rainbow they would not have seen otherwise. Likewise, whether through user error, divine providence, or infernal mischief, I began my journey to the Minerva Project–sponsored "Inside Innovation" course by mistake.

I started this journey intending to study something mundane; my goal was to take a course in cybersecurity or a national security practicum to solidify my professional expertise. Therefore, when I found myself assigned to this course without knowing anything about it, I did what any normal person would: I Googled it. According to its Web site, the Minerva Research Initiative's aim is to "leverage and focus the resources of the Nation's top universities" to "improve DoD's basic understanding of the social, cultural, behavioral, and political forces that shape regions of the world of strategic importance to the

U.S."[1] Armed with just this basic mission statement, I (virtually) walked into my first class ready to see where this detour would take me.

Getting Started

Unlike most of my National Defense University courses to date, I could tell that this course would be open-ended from the start. To prepare for this class, our instructors had the students take a short quiz to highlight our tendencies toward each of the four personality traits: analytic, conceptual, directive, and behavioral. We began our first lesson with a discussion of our responses as the means to introduce ourselves and to understand what unique qualities each of the students would bring to the course. Interestingly, of the five students enrolled in the class, the distribution of traits was greater than I had predicted; although each of us has been in the military, our responses demonstrated that we each think about and experience the world in vastly different ways. As the course proceeds, I am realizing that it is this diversity of thought that will allow us to advance our cause and develop novel research for Minerva.

However, even with the benefit of wide-ranging personalities and viewpoints, I was daunted by the lack of structure in achieving our research goal. I was not alone in feeling this way—each of my peers expressed the same frustration—but that knowledge did not bring much comfort. As we were told in our first lesson, our goal for the course was very open-ended: we were instructed to contribute to Minerva's topic of interest number 8: "[Develop] Models and Methods for Understanding Covert Online Influence," with a special focus on China's influence operations.[2] While there is a certain excitement in being able to direct research, the lack of guidance challenged us to understand the material and make decisions based on limited information. For example, our second lesson was an interview session with U.S. Indo-Pacific Command (USINDOPACOM) personnel. Without an established goal in mind, we were forced to develop questions that would guide our future research.

Building a Plan

Fortunately, our conversations with USINDOPACOM personnel, coupled with the course materials, helped provide some structure. Through our readings, we learned that the Chinese conduct influence operations for two distinct audiences: a domestic one (Chinese population) and an international one.[3] During the USINDOPACOM interview, we discussed the different messages and tones that China uses with each of the audiences and expanded the range of audiences to further divide the international audience into two different categories: an expressly global audience and targeted countries and populations.

This distinction caused me to realize we would be forced to make hard decisions on the scope of our project. With three different audiences that could be researched in a limited time, we would have to decide between researching all the spheres and sacrificing depth or focusing on one audience at the expense of the other two. Knowing that a brief survey would not meet the intent of this research, I decided to select research that would develop the largest gains for the United States within the year we have allotted to this course. Assessing each alternative, I concluded that researching targeted countries and populations would lend itself well to this rubric: if we could work with USINDOPACOM to identify adverse actions (for example, a targeted country allowed China to build a port that impacted U.S. access to a region), we could conduct a retrospective longitudinal research project to identify social media traffic and messages used to influence that action. Given enough case studies, I believed that we could identify common trends.

Presenting Initial Ideas and Mapping a Way Ahead

After developing the initial hypothesis, I shared my idea with my peers, and we worked to refine it for presentation to our stakeholders and co-researchers. I was nervous about presenting the idea; despite working hard to understand the information environment through three classes, we were still amateurs in the field, and we would be presenting our ideas to accomplished researchers and operational specialists. Despite the short development time-

line and relative lack of expertise, our hypothesis was well-received. Now the real work begins. However, despite the challenges ahead, I am excited to see where this path takes us.

Notes

[1] Minerva Research Initiative, "About," available at <https://minerva.defense.gov/About/>.

[2] Minerva Research Initiative, "Research Priorities," available at <https://minerva.defense.gov/Research/Research-Priorities/>.

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Bridging the Gap: Military, Civilian, and Industry

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Cross-collaboration between government, academia, and industry is an integral linchpin to maximizing skills, knowledge, and experience to further protect and defend U.S. national interests and security.[1] The current collaboration is established between the University of Washington and National Defense University (NDU) as well as U.S. combatant command customers U.S. Indo-Pacific Command (USINDOPACOM) and U.S. Africa Command. Adding to this dynamic trifecta is NDU's unique opportunity to exploit the different thought processes between career military personnel representing the U.S. Services, civilians representing U.S. Government agencies, and civilians who spent their professional years working in the private sector to increase shareholder wealth. This last element is vital as it enhances NDU's research value to its sponsor, the Minerva Defense Education and Civilian University Research Partnership.

Furthermore, NDU's high standards require it to retain not one but two accreditations: New England Commission for Higher Education and, in support of professional military education (PME), the Process for Accreditation of Joint Education.[2] As highlighted in Minerva's "Owl in the Olive Tree" blog, NDU's engagement of myriad professionals with mixed backgrounds

"does highlight the diversity of voices [Minerva] seeks out in its effort to engage researchers on security-related topics."[3]

Merging Minds: Civilian, Military, Industry

The integration of for-profit business is vital to NDU's efforts as it provides an altered cognitive lens and approach in conducting research for the NDU practicum "Inside Innovation: Understanding Chinese Influence." Coupling the private sector perspective with career military and government adds another for-profit layer to the cohort's research as it delves deeper into China's geopolitical and socio-economical posturing while it pursues global control of instruments of power (diplomacy, information, military, and economics). NDU's strategic integration of private sector experience complements Minerva's goal of diverse thinking and opens the door for increased collaboration with industry professionals by having the right people in the room, exploring ideas, challenging assumptions, assessing the data, and creating the right questions to further the research.

As NDU and, particularly, PME, focus on developing career military professionals, this is an opportunity for PME students to gain insight into for-profit approaches to solving complex problems. NDU is setting a best practice, providing trusted space to expand the cohort's hunting and pioneering efforts to reframe requests for information from those collecting the data—in this case, knowing how to analyze the facts to illuminate China's opaque objectives regarding its debt-inducing, country-manipulating Belt and Road Initiative underpinned by its influencing information campaigns in cybersecurity and cyberspace.[4]

Cross-Cohort Cogitating

For the past several months, using cognitive-based guided experiential learning pedagogy,[5] this select team, broken into smaller work groups, has been leveraging such project-based discovery to address Minerva's real-world problem-set to understand the national security impact of China's propaganda and its sphere of influence (misinformation) within the USINDOPACOM

area of record.[6] Furthermore, China's use of cyberspace as a threat is evolving, although still lagging the abilities of the United States. The Chinese Communist Party has realized "that cyberspace has become a new and essential domain of military struggle in today's world," allowing China to pivot from and complement its information warfare strategy.[7] I find it valuable that, because we are a new team adding new knowledge to previous efforts, Topic 8 offers five primary objectives as guidelines, ranging from establishing a baseline understanding of China's propaganda machine to measuring such efforts to exploring other areas of influence, including information or disinformation campaigns across the Indo-Pacific region.[8]

To maximize the brain power from the work group engagement, the Decision Style Inventory assessment tool revealed that the predominantly analytical community, which likes to get things done, creates some challenges using an applied learning approach to elucidate China's obscure cultural mores by removing known and unknown critical thinking biases. Several have also worked in the combatant commands. It is not clear how many (aside from me) have worked for several years driving shareholder wealth in the private sector, but NDU is able to close this industry talent gap by integrating U.S. business experts managing business in China, as well as influencing the future of cybersecurity and cyberspace. As the work groups proceed, they can maximize different perspectives, expose blind spots, and admit biases to identify the research to further the analysis.

Closing the Mind Gap

In "Net Assessing American and Chinese Innovation," the benefits of the "triple helix" that borrows from the basic strength, weakness, opportunity, and threat analysis across government, industry, and academia add a deeper assessment of the adversary's behaviors, intentions, perceptual limitations, and strength-weakness asymmetries.[9] The work groups can leverage this cross-functional model to provide a different lens through which to assess the global impact of Chinese influence on national security. Integrating participation of those with for-profit experience could complement NDU

and PME programs and add new knowledge to the "Inside Innovation: Understanding Chinese Influence" research project.

Notes

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[9] Walter M. Hudson, "Net Assessing American and Chinese Innovation," *War on the Rocks*, May 28, 2021, 4, available at<https://warontherocks.com/2021/05/net-assessing-american-and-chinese-innovation/>.

Looking Forward: Improved Situational Awareness of Chinese Covert Online Influence

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In alignment with the 2017 National Security Strategy, the U.S. Government and Department of Defense (DOD) must develop senior-level strategic leaders who understand our strategic security challenges and emerging technology capabilities to support the organizations that, along with academia and the commercial sector, will oversee innovative technology development efforts to meet those challenges.[1] Accordingly, the DOD's National Defense University (NDU), in Washington DC, created the College of Information and Cyberspace (CIC), the mission of which is to "educate national security leaders and cyber workforce on the cyber domain and information environment to lead, advise, and advance national and global security."[2]

Within this graduate-level academic program of strategic studies in information and cyberspace, the Joint Professional Military Education (JPME) Phase II curriculum is integrated.[3] This education sabbatical provides senior-level military officers and equivalent government service civilians the opportunity to gain professional development education in an accredited graduate institution while also meeting the requirements of the 1986 Goldwater-

Nichols Act, which mandates JPME education to obtain the designation of military joint service officer.[4]

Elective Course Research Context

The CIC-6044 elective course is an NDU pilot course sponsored by the Office of Naval Research, the Minerva Research Initiative, and the Defense Education and Civilian University Research (DECUR) Partnership and co-sponsored by U.S. Indo-Pacific Command (USINDOPACOM) and U.S. Africa Command.[5] According to the Minerva Research Initiative's 2019 award announcement, the DECUR partnership aims to "develop a comprehensive understanding of the astroturfing and censorship efforts by China through a unique and novel lens of social movement theory."[6]

Using the Minerva Research Initiative 2019 Topics of Interest data sheet,[7] the CIC students and research staff focused research efforts during the spring 2021 term on topic 8, "Models and Methods for Understanding Covert Online Influence." The general guidance provided in the Minerva award announcement is to analyze the regional focus on attempts to use online influence strategies to deceive, influence, polarize, and manipulate Indo-Pacific audiences for strategic political advantage by peer states and their proxies.[8] Research lead Dr. Gwyneth Sutherlin coordinates the research efforts between the sponsoring organizations and the CIC students, whose average amount of professional experience is between 15 and 35 years.

This education and research opportunity will complement the professional experience I have developed over more than 35 years in the U.S. military and civilian government service, having worked between the Services, coalition military forces, industry, academia, and government civilian organizations. During the late 1990s, I was assigned to the Joint Advanced Warfighting Program (JAWP), Institute for Defense Analyses (IDA), with a team of senior military officers and professional research analysts who provided independent analytic review of current and future joint force military capabilities for senior leaders within DOD.[9] Many innovative concepts developed during the JAWP research, analyses, and simulation of future global conflicts

influenced future DOD research efforts and acquisition funding decisions, which emerged as the result of the knowledge and experience brought together by IDA.

In the same fashion, the CIC-4066 cohort class has a valuable opportunity to merge the breadth of experience from the student body, the CIC research staffs, and other academic professionals in the social science fields and to provide critical input to the combatant commands. This research team will blend a variety of thought and experience from which innovative ideas can be generated and provided to the co-sponsor organizations and computer scientists for consideration of possible new analytic tools to better understand China's influence campaign strategies.

Current State of the Spring Course

The spring 2021 CIC course started with student reviews, discussions of course reading materials, and online scholarly articles to begin to understand the information environment and cyber domain. We next reviewed relevant topic materials available online and in NDU library databases as well as the analytical work of the spring 2020 CIC cohort group.

The class began the process of learning to research data and dataset structures. Future initiatives would entail brainstorming discussions with the users to develop more efficient and innovative data analysis ideas, which could surge from the multidisciplinary group of participants. Next, Dr. Phillip Saunders, director of the Center for the Study of Chinese Military Affairs at NDU, provided the class a series of updated databases his team compiled from online and offline research of U.S., Chinese, and USINDOPACOM area of responsibility (AOR) media channels. The data sets addressed online coverage of major Chinese events throughout the AOR, such as country visits of high-ranking officials, military exercises in theater, and military port visits. The data, which appears to be current, relevant, and useful, can be reformatted to assist in cross-reference and analysis of events across the AORs of various combatant commands. This type of data will allow researchers to extrapolate snapshots of Chinese military, diplomatic, and/or economic

outreach activities in particular regions and can aid in the assessment of Chinese regional priorities based on commitment of resources by the CCP.

The author of a recent War on the Rocks article "China Flaunts its Offensive Cyber Power" described a series of offensive cyber competitions sponsored by the Chinese government.[10] He explained how Chinese officials acquire at point of demonstration these cyber hacking capabilities, which are used almost immediately to achieve their offensive cyber attack goals. I believe these events demonstrate how the CCP leadership intends to overtly flex their government muscles to send carefully crafted influence messaging to targeted audiences across the globe. This type of information can add greater understanding of the CCP's strategies when correlated with other related materials.

However, during a recent video conference with representatives of the USINDOPACOM J9 and J39 offices, interesting discussions evolved around two major topics: what the commands need to better assess threat actors in the information and cyberspace environments, and their belief in the synergy that can be achieved through the combination of civilian university engineering and research resources along with DOD war-college-level students. I believe the students of the CIC-6044 course are well positioned to collaborate with the combatant commands and academia to provide valuable input for the future development of customized analytical tools and algorithms that can organize and assess online and stored data, compile relevant trends, and assist in the assessment of information and cyberspace theatre actors, as addressed by the USINDOPACOM representatives.

Conclusion

The joint and interagency students of the CIC have a great opportunity to practice research methods within the JPME construct in support of a top-tier national strategic priority. This educational experience will take place working together with a cohort group formed from all branches of Service and interagency organizations, as well as a combatant command that is seeking academic assistance in improving information and cyberspace situational

awareness of one of our Nation's most critical adversaries in the Great Power competition.

During the course, representatives from all agencies hope to participate in the development of social science–based reviews and updates to existing ecologies of U.S.- and Chinese-based platforms, relevant actor networks, and online/offline event timings that convey Chinese strategic decisionmaking perspectives for the Indo-Pacific region. Our CIC teams should continue to review in detail the databases provided, correlate this data with additional datapoints of interest, and compile questions for consideration by the USINDOPACOM counterparts and civil affairs personnel on the ground.

Notes

[1] *National Security Strategy of the United States of America* (Washington, DC: The White House, 2017), 2.

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[10] J.D. Work, "China Flaunts its Offensive Cyber Power," *War on the Rocks*, October 22, 2021, available at <https://warontherocks.com/2021/10/china-flaunts-its-offensive-cyber-power/>.

The Nychthemeronic Hunt for Knowledge and Wisdom: Minerva and Her Owl

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The owl of Minerva takes flight only when the shades of night are gathering.
—G.W.F. Hegel

Hegel used the above metaphor to describe how philosophy, knowledge, and wisdom—for the purpose of understanding the future—can only occur once one reflects on history or the previous course of human events.[1] If one were to stretch the metaphor further, one could state that in the darkness of night, the Owl of Minerva hunts for wisdom through historical analysis and the search for patterns and actions that frame not only history, but also the coming day—much like humanity's hunt for wisdom through historical analysis. However, the metaphor should include the actions of Minerva herself, as she is the diurnal huntress of knowledge and wisdom.

Additionally, night and day are not separate, just as the present and future are not separate. This is the nychthemeron: the unbreaking cycle of continuity with night and day as one. The question is, how does one act as the Owl of Minerva on the nocturnal hunt for wisdom through history while also acting as Minerva and hunting diurnally for knowledge—especially as it relates to understanding influence and influence operations?

My day and night eyes opened and adjusted while participating in the first few weeks of the "Inside Innovation: Understanding Chinese Influence" course at the National Defense University. Supported by a grant from the Office of the Secretary of Defense Minerva Defense Education and Civilian University Research (DECUR) Partnership, the course provides a training and hunting ground within which the students, instructors, and partnered researchers may act as Minerva and her owl in the discovery of the knowledge and wisdom necessary to understand the efforts of global Chinese influence.[2] It is appropriate that Minerva and her owl serve as the logo and namesake for the Minerva Research Institute and Minerva-DECUR.

The huntress and her owl are emblematic representations of what the participants in the "Inside Innovation" course seek to achieve: applying the social sciences, such as philology, linguistics, history, and anthropology, to hunt for a deeper understanding of Chinese influence and how to potentially respond to that influence. Achieving that understanding begins with the hunt itself, although in place of spears, arrows, and traps, the students use data, data sets, dialogue, and a deluge of potential hypotheses. These tools will allow the hunters to catch their prey and to understand Chinese influence activities—and perhaps how to respond.

In the course so far, provided data on influence operations, specific Chinese influence efforts, and basics on human cognition increased awareness and knowledge for the course participants. The data sets presented to the students also increased knowledge of the environment itself, as well as the gaps within those data sets. It was through the dialogue of the course participants where the gaps arose. I observed that the dialogue was the most valuable tool for the participants as it relied on their previous experiences and ideas to identify gaps and to increase awareness in the course group. These three tools affected the slow trickle of potential hypotheses that should turn to a deluge as the hunt progresses.

Though the first few weeks of the course initially appeared random, unstructured, and chaotic, it was in this natural chaos where all the participants thrived and worked to destroy previous frameworks for understanding Chi-

nese influence and activities and created new ones. Creation requires destruction, and the new creation will be the emergence that occurs within the chaotic and systemic nature of the course. For example, our internal discussions and debates on Chinese influence and messaging in the Indo-Pacific region identified potential cultural and semantic differences that may indicate U.S. misunderstandings of Chinese information/influence actions. Through our hunt to understand these differences—such as the concepts or meanings of time, prosperity, sovereignty, and legitimacy—we created the base for a new tool, or rather hypothesis, to use in our hunt for deeper knowledge on how these terms or semantic imagery may indicate or elucidate the meaning of Chinese influence and messaging.

Additionally, during my hunts with the provided tools in the first half of the course, I developed a few separate and very rudimentary hypotheses that may potentially relate to and support the Minerva DECUR goals. I hope that the sharpening of tools of the course by me and fellow hunters will allow the further expansion of one or more of the below hypotheses:

◆ To increase comprehension of Chinese motivations, one must understand a difference in English and Chinese grammar. The lack of a future tense in Chinese presents a possibly very different weltanschauung (worldview) from English and/or other Germanic and Latin-speaking cultures. What does "future" mean to each side? How does that difference drive influence action or reactions?

◆ To understand Chinese influence operations, one must understand historical use of influence operations by and on China in the past. How might near past and even ancient influence operations affect Chinese influence action and susceptibility?

◆ To understand current Chinese influence on its own population and how the Chinese view the world, one should look at what they are reading, specifically the best-selling books in China.[3] China is one of the top three countries of bibliophiles behind India and Thailand.[4] How does knowing

what the Chinese read indicate what the Chinese Communist Party allows for publication, how the people are susceptible to influence, and what is influencing their worldview?

◆ To understand Chinese military diplomacy, one must have a greater appreciation of China's expansion and use of its military attaches as the primary, least intrusive, and most inconspicuous means of influence. Where and how are Chinese military attaches acting in a manner that negatively impacts American interests?

These undeveloped hypotheses prove the effect of the first few weeks of using the tools provided in the course. Thus far, the tools allowed the students to destroy old frameworks and to create new ones through an initial understanding of the environment and Chinese influence. This initial understanding is crucial to allow the students to act as the Owl of Minerva serving as a wise hunter at night as well as Minerva the huntress during the hunt for knowledge in the day. As the participants continue the course, they will expand the knowledge and wisdom necessary to better understand global Chinese influence operations and to become nychthemeronic predators.

Notes

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Findings

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Has our understanding of Chinese Influence changed over the past two years because of this basic social science research project? In closing, I will answer this question by sharing some of the amazing scientific insights we created through this project and our collaboration. All these findings have been briefed at two timepoints to our stakeholders and end-users who would be most likely to use our work: at the mid-points of each course when the work might need recalibration and at the completion.

Before presenting the findings, I want to share the four questions that guided our classroom discussions. We pursued these questions with a unique approach that we anticipated would facilitate collaboration across disciplines since the approach offers a natural pathways for each partner to inject their areas of expertise.

We asked four research questions:

◆ How do the two primary vectors of influence operations—astroturfing and censorship—manifest both within and outside the mainland at the advent of a collective action event in an Indo-Pacific region?

◆ How can we describe operations in the information environment in terms of an ecology of U.S.-based platforms and Chinese-based platforms, relevant actor networks, and online and offline event timings that convey a Chinese strategic decisionmaking perspective for the Indo-Pacific region?

◆ How can we use observations of both online and offline events to inform new cross-cultural theory in social interaction? Specifically, how can we understand cross cultural variation in strategic decisionmaking through event frame analysis?

◆ Can we validate a model that connects online and offline activities for Chinese influence operations in the Indo-Pacific region?

The research questions above were developed to take the larger problem of understanding Chinese influence and break it into smaller pieces. For example, question two is designed to elicit a more nuanced understanding of "influence" by asking: how would you describe this term specifically? As an expert, you may know it when you see it, but what are the specific components that you are really attuned to, that you are noticing when you say you are observing influence? Question 2 digs into the implicit knowledge that many practitioners and experts have but struggle to articulate. Relatedly, part of our work in the classroom was learning the analytic skills that would allow us to improve how we talk about influence and its affects and share our expertise with other groups who can make use of it, such as civilian researchers. The more specificity we can have, the better.

In the first year, to pursue these questions, students spent time searching for use cases or situations in which we could observe the Chinese government performing influence operations online and offline. There has not been enough social science research clearly linking or modeling how online and offline influence work together in terms of affecting behavior, and even less across cultures. To narrow the search for a suitable use case, we often spoke with experts in the Pacific region. We considered issues such as whether a nation recognized Taiwan and how the Chinese government engaged through tourism, media, and treaty negotiation. COVID-19 medical aid and its role

in diplomatic relations was also of high interest during our project since it easily provided online and offline activities aimed at the same audience. Finally, many countries were considering infrastructure projects from China and the timeline of their decisions offered a potential means to trace online and offline activities over time that might affect a decision or influence objective.

Regional partners such as civil affairs officers were exceedingly helpful for students and academic partners for investigating these research questions. Their language and cultural expertise was an immense resource. Such partnerships allow senior decisionmakers to operate successfully with regards to topics in which they are not domain experts. The collaboration, in which everyone could be an expert at one time and then a novice at another stage, was fantastic and highly relevant to both research in multidisciplinary groups as well as in joint warfighting environments.

Due to the complexity of the problem, as well as the added layer or performing the research through a PME classroom environment, the first year was intended to be spent identifying and scoping preliminary scenarios that showed potential for being relevant to national security and interesting for basic social science inquiry, and which had feasibility for obtaining data to answer the questions and could be analyzed in the remaining time.

At the conclusion of the first year, the three scenarios (Taiwan recognition, COVID diplomacy, infrastructure contracts) were briefed on their relevance and feasibility assessments to our main stakeholders including those who would benefit most from the research, primarily USINDOPACOM. Students also created knowledge artifacts for distribution in the form of annotated bibliographies, composed of short summaries about their most relevant research findings and videos or podcasts about an important lesson that would be helpful to pass along to others in the field.

The first year's work was reviewed by the second year's students who joined the project with considerable regional expertise. However, due to unforeseen circumstances in which an academic and military partner had to leave the project, we could not build on the year-one plan, but instead had to

restart. The year-two students' energy and agility to dive into this situation was impressive.

Through problem-based learning, the year-two students divided the research question elements into cultural unknowns, use case identification, and data selection. Each subgroup then concentrated on an area of research to brief back to the whole class who would then synthesize all elements toward answering the research questions.

One subgroup explored Chinese culture and identified three concepts they hypothesized would have a unique meaning and role in how the Chinese government is approaching influence. The underlying ideas is that by prioritizing how we improve our understanding of legitimacy, sovereignty, and prosperity from a Chinese lens, we would improve our understanding of Chinese influence. The group further suggested that we investigate the Chinese concept of strategic time horizons.

Another subgroup looked for where we could observe online and offline influence and, through diligent research, found examples of the Chinese government promoting youth essay contests in countries where they also had One Belt One Road infrastructure projects planned. The class used this set of activities to explore a series of hypotheses with support from interagency technical partners. We were able to test, evaluate, and iteratively evolve our understanding through a dynamic research process based on this use case. We were able to synthesize findings from the cultural concepts group to understand the content and the timing of the media around the essay contests. As a baseline, we considered the frame of "debt trap diplomacy." This was a phrase that caught on and negatively impacted how Chinese infrastructure projects were perceived. The class hypothesized that we could improve our understanding of Chinese influence by observing online and offline activities related to Chinese efforts to countering this negative perception to pursue their infrastructure projects. We used the essay contest example to explore this hypothesis. Students successfully demonstrated a clear understanding of the research questions and the analytic techniques for social science research, and benefitted from partnerships to execute testing on a series of associated

hypotheses that provided more and more clarity for our end-users in the operations community.

A third subgroup looked deeply at the data to consider what insights we might draw from viewing it through a social science lens and combining observed patterns with new information from the other two groups. The group worked with a rich dataset created at the National Defense University (NDU) by Dr. Phillip Saunders that catalogs over 20 years of Chinese military diplomacy activities such as high-level visits by their military leaders, port calls, or participation in exercises. The audience or other participants in these activities can be an indication of influence, particularly when paired with other information about events of the time. Often, the focus for influence is around online data or social media, so considering the decades of military, physical-world activities offered a different perspective for how the class looked at online media. The time horizon as well as the cultural concepts, which could now have a physical/military manifestation, all became potential elements for interesting hypotheses.

Each hypothesis was hammered out and scoped by our stakeholders. This was one of the most rewarding parts of the process that ensured the research was always on track to be useful from a national security perspective. The students were able to answer the initial research questions and describe operations to such an extent that they were able to begin to suggest a new model, including cultural variation in concepts and timings—this model then, in turn, could begin to be tested and validated by our end-users. Validation is still a future objective, but through the DECUR partnership NDU students have created new social science knowledge to start us down the path.


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About the Editor

Dr. Gwyneth B. Sutherlin is a leading expert in sociocultural analysis—the translation of qualitative research into discrete technology design for decisionmaking. As a faculty member in the College of Information Cyberspace at the National Defense University, she develops curriculum and supports the Joint Staff as a subject matter expert. She is also a visiting scientist at Pacific Northwest National Laboratory in the group for national security and artificial intelligence. Based on international fieldwork, Dr. Sutherlin speaks and publishes frequently on cultural cognitive variation in UX, social science driven ML, crowdsourcing for decisionmaking, and localized data analysis models supporting national security policy decisions. She advocates for research collaboration between government and academia bringing innovation to the classroom. Dr. Sutherlin has a degree in political science from Indiana University and a Ph.D. in peace and conflict studies from the University of Bradford. She has worked in eight languages.