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Letter from the Editor-in-Chief

Dear Reader,

I am pleased to introduce the latest issue of the Journal of Politics and Strategy, sponsored by Carnegie Mellon University's Institute for Politics and Strategy (IPS). This edition features the original research of a selection of stellar undergraduate and graduate students from the Institute for Politics and Strategy as well as interviews between three members of CMU's Reserve Officer Training Corps and our 2021-2022 cohort of IPS Military Fellows.

Since the publication's founding in 2013, each issue has included undergraduate research submitted in response to a call for submissions. The articles presented here focus attention on international and domestic issues, from semiconductors to K-pop and soft power, and from allocation of financial resources in public education to overcoming the current downswing with political engagement. The issue also includes the concise version of one of our Master of Science in International Relations and Politics (MS IRP) graduate theses. As well we have a series of three interviews with our Army, Navy and Coast Guard Fellows.

Thank you to all the students whose work is featured here and especially to JPS founding editor Dr. Kiron Skinner for her vision of promoting the work of our students. Our aim is to maintain Dr. Skinner's established tradition of an academic social science journal that invites members of the Carnegie Mellon community to contribute to important policy debates of the day – be they local, national or internationally focused.

Much gratitude to our talented student graphic designers Yoshi Torralva and Jacqueline Lococo for their expert work and thank you to my colleagues Emily Half and Bill Brink. At CMU and certainly at IPS, our heart truly is in the work.

Sincerely,
Abby W. Schachter
Editor-in-Chief

BTS, Pop Culture, and Soft Power

MILLIE ZHANG

Pop culture plays a significant role in the daily lives of citizens as sources of entertainment and gossip to bring up in conversation with friends and family. Yet, when a particular pop culture phenomenon grows to be embraced on the national level and is used to represent the country as a whole, then pop culture influencers' clout can translate into soft power. But how much influence do pop culture influencers have on foreign policy and how is that translated into soft power? And does this relationship differ among different countries?

Pop culture influencers do have a significant effect on a country's soft power in the international realm as understood by the political theorists Alexander Wendt and Joseph Nye. Indeed, the significance of the pop culture influencers on a nation's soft power depends on the relationship between the country's government and the specified cultural phenomena. Examining the case of South Korea and BTS, helps to demonstrate the translation of pop culture into soft power based on these two theoretical definitions. Pop culture phenomenon and influencers can have a significant impact which is then translated into soft power.

Theoretical Analysis

In Wendt's variation of Constructivist theory, he highlighted the importance of shared ideas – knowledge – in international relationships.[1] According to Wendt, "socially shared knowledge is knowledge that is both common and connected between individuals" and that "the structures of human association are determined primarily by shared ideas rather than material forces."[2] Furthermore, Wendt argues that actors are categorized into four different identities: (1) person or corporate, (2) type, (3) role, and (4) collective.[3] Person or corporate identity is comprised of self-organizing, homeostatic structures that differentiate actors from other entities while the type identity is for individuals who have one or more similar characteristics regarding their appearance, attitudes, values, experiences, historical similarities, knowledge, opinions, etc.[4] Role identity is dependent on the culture and not intrinsic attributes.[5] Lastly, collective identity is unique in the sense that it is a combination of role identity and type identity, having a causal factor which causes actors to view the interests of others as part of their own self-interest.[6] Thus, actors with collective identity possess altruism.[7] It is also identity which defines interest;

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1 Jackson, Robert H., and Georg Sørensen. Introduction to International Relations: Theories and Approaches. Oxford University Press, 2016.

2 Ibid.

3 Ibid.

4 Jackson, Robert H., and Georg Sørensen. Introduction to International Relations: Theories and Approaches. Oxford University Press, 2016.

5 Ibid.

6 Ibid.

7 Ibid.

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national interests change according to changes of identity.[8] The type of identity which most relates to the cases I will introduce later in the paper is collective identity.

As for the different international system cultures that are created on the basis of the different nature of interaction between countries, Wendt describes three – Hobbesian, Lockean, and Kantian. In Hobbesian culture, states have no shared ideas and are invariably enemies.[9] Moreover, the four features which make up this understanding of cultures include that military power is treated as the most critical and that decision-making tends not to consider the potential consequences of actions, failing to prepare for the worst situation in the future.[10] Another feature of Hobbesian culture is that states tend to take strong actions to change the status quo and treat each other as enemies, destroying or conquering their adversaries if possible.[11] Lastly, if a war breaks out, the state actors involved would fight with perceived enemies, using violence without any limitations.[12]

On the other hand, in Lockean culture as described by Wendt, states may have shared ideas with others but will treat other states as rivals. Four characteristics also make up this definition, one being that no matter what conflicts exist between states, actors involved must adhere to each other's sovereignty in the current status quo.[13] Additionally, as competitors understand that other actors may use force, relative military power is still important.[14]14 However if the conflict would lead to war, state actors would limit the violence they inflict.[15]15 The last trait of Lockean culture is the nature of rational behavior. In other words, states do not always have to escalate tensions as the mutual respect of sovereignty allows for lower risks of violence from adversaries.[16]16

Kantian culture is the last which Wendt asserts in his theory. According to this type, if one state treats another as a friend, these states will develop shared institutions between them.[17]17 Unlike Hobbesian and Lockean culture, there are only two rules for Kantian culture: (1) non violence - state actors cannot use war or the threat of war to settle disputes, (2) mutual help - state actors will fight as a team when one of them is threatened by a third party.[18]18 All three of these cultures defined by Wendt are demonstrated in the translation of pop culture in China, South Korea and Japan into soft power as I will describe in this paper.

Nye's Soft Power

According to Nye, there are two different types of power. Hard power is "the ability to get others to act in ways that are contrary to their initial preferences and strategies" which includes using coercion through threats and inducements.[19] On the other hand, soft power is "the ability to get others to want the outcomes that you want" and more specifically, it is "the ability to achieve goals through attraction rather than coercion."[20] Nye makes the argument that soft power is as important as hard power and is even more so in international politics.[21]21 He explains this is so as soft power enables a change of behavior in others by using persuasion

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8 Ibid.
9 Wendt, Alexander. Social Theory of International Politics. University Press, 1999.
10 Ibid.
11 Ibid.
12 Wendt, Alexander. Social Theory of International Politics. University Press, 1999.
13 Ibid.
14 Ibid.
15 Ibid.
16 Ibid.
17 Ibid.
18 Ibid.
19 Nye, Joseph S. The Future of Power. PublicAffairs, 2011.
20 Nye, Joseph S. Soft Power: The Means to Success in World Politics. Public Affairs, 2004
21 Nye, Joseph S. The Future of Power. PublicAffairs, 2011.

and attraction without any need for competition or conflict to occur.[22] Furthermore, unlike hard power, which in this day and age, would be more costly both financially and politically, soft power is "free" in the sense that it does not require substantial resources and has limited consequences in the case of failure.[23] Nye also points out the importance of style in utilizing soft power. Behaving arrogantly might be counterproductive and bring about repugnance rather than attraction as soft power is a matter of seduction[24]. Additionally, he notes that soft power has not always been used for good purposes and "it is not necessarily better to twist minds than to twist arms."[25] For instance, propaganda is a form of soft power.

BTS and South Korea

Bangtan Sonyeondan or Bulletproof \Boyscouts when translated into English is the complete name of the seven-member Korean pop group we know more commonly as BTS who has racked in awards like the American Music Award for Favorite Duo or Group Pop/Rock and the Billboard Music Award for Top Social Artist over the years after breaking into the American music industry. BTS debuted in 2013 under Big Hit Entertainment, borne out of CEO Bang Si Hyuk's desire to create a group that could withstand social pressures and serve as a voice for the younger generation.[26] BTS'

BTS at the White House May 2022

ability to strike deep on a number of intensely relatable concepts have made them universally appealing.[27] This includes their debut song, "No More Dream," calling out young people without dreams of their own, challenging societal academic expectations for Korean youth in the process as well as their album trilogy Love Yourself which focused on a message of self-love.[28]

However, their thematic messages throughout their discography does not stay confined. In a speech to the United Nations in 2018, RM, the leader of the group, spoke about the importance of loving and speaking for oneself, asserting his own struggles with his "many faults and…many fears" and encouraging young people all over the world to "speak yourself" no matter "where you're from, your skin color [or] your gender identity."[29] This was not the only moment in which BTS demonstrated its reputation as one of the most socially conscious groups in Korea. Their lyrics have touched on subjects like mental illness, consumerism and issues in the school system as mentioned in "No More Dream." They partnered with UNICEF for an anti violence campaign called "Love Myself" in November 2017, a year before their speech to

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22 Ibid.
23 Ibid.
24 Ibid.
25 Ibid.
26 Haasch, Palmer. "How Korean Sensation BTS Became the Most Popular Boy Band in the World." Thrillist, www.thrillist.com/entertainment/nation/who-is-bts-korean-boy-band-explained.
27 Haasch, Palmer. "How Korean Sensation BTS Became the Most Popular Boy Band in the World." Thrillist, www.thrillist.com/entertainment/nation/who-is-bts-korean-boy-band-explained
28 Ibid.
29 "'We Have Learned to Love Ourselves, so Now I Urge You to 'Speak Yourself.'"" UNICEF, 30 Apr. 2021, www.unicef.org/press-releases/we-have-learned-love-ourselves-so-now-i-urge-you-speak-yourself.

the UN.[30] BTS and ARMY were successful in raising $1 million for the campaign and UNICEF Executive Director Henrietta H. Fore thanked them, stating that this stood as "proof that young people around the world can come together and make a difference."[31]

BTS has also participated in other philanthropic causes relating to a variety of issues around the world. Two of the most prominent were that related to the coronavirus pandemic and the Black Lives Matter movement in 2020. BTS's scheduled tour date in South Korea were cancelled due to concern over COVID-19 and fans have been helping with relief.[32] Following the news of the cancellation of the April concerts, ARMY who had gotten tickets for the sold-out shows began a movement to use their refunds to instead donate to help with relief and prevention efforts.[33] This was seen with the Hope Bridge Korea Disaster Relief Association which saw an uptick in thousands of dollars with some donating in the name of BTS or ARMY as a fanbase itself.[34] The charitable movement took major inspiration from Suga's reported donation of 100 million Korean won (about $83,000) to Hope Bridge.[35] As for the BTS' inspired philanthropy regarding the Black Lives Matter movement, the kpop group donated $1 million to the cause – which their fans rushed to enthusiastically match within 25 hours.[36] The reasoning BTS gave as to why they chose to contribute was that "prejudice should not be tolerated," with Suga asserting that they want to voice the fact that "it's the right of everyone to not be subject to racism or violence" and J-Hope stating that "whether through [their] music or charity," they want to do what they can to "make it a better world."[37]

The rise of BTS has been linked to explicit strategies on the part of the South Korean government. [38]The role of Hallyu – "Korean Wave" referencing the phenomenal growth of Korean culture and popular culture ranging from music and movies to online games and Korean cuisine – in economic policy was first mentioned in 2001 in an address by South Korean President Kim Dae-Jung, who termed it a "chimney-less industry" and an engine of economic development that creates high added value with relatively little investment of resources compared to industrial development. [39]

As seen in the diagram below, BTS as a group itself, was surprisingly on the same playing field as corporate giants including Samsung, Hyundai, LG Electronics, Kia and Korean Air in 2018 in regards to their contribution to South

How Much Money Does BTS Make for South Korea?
Revenue of selected companies/entities as a percentage of South Korean GDP

SAMSUNG 13.1% $211.94b

HYUNDAI 5.3% $85.26b

LG Electronics 3.4% $54.31b

KIA 2.9% $47.36b

KOREAN AIR 0.7% $11.65b

BTS 0.3% $4.65b

South Korean GDP $1,619b

2018 figures
Sources: Fortune 500, Korean Airlines, World Bank, Hollywood Reporter

statista

30 Kelley, Caitlin. "BTS Deliver Speech At United Nations Urging Young People To 'Find Your Voice." Forbes, Forbes Magazine, 25 Sept. 2018, www.forbes.com/sites/caitlinkelley/2018/09/25/bts-deliver-speech-at-united nations-urging-young-people-to-find-your-voice/?sh=3b5d9bf7142d.

31 Ibid.

32 Benjamin, Jeff. "BTS Fans Inspired to Donate Concert Ticket Refunds to Coronavirus Relief." Billboard, 9 Mar. 2020, www.billboard.com/articles/news/international/9324851/bts-army-donate-tickets-refunds-coronavirus-relief suga.

33 Ibid.

34 Ibid.

35 Ibid.

36 Davis, Rebecca. "BTS on the Decision to Donate to Black Lives Matter: 'Prejudice Should Not Be Tolerated." Variety, Variety, 3 Oct. 2020, variety.com/2020/music/news/bts-black-lives-matter-donation-1234789434/#!

37 Davis, Rebecca. "BTS on the Decision to Donate to Black Lives Matter: 'Prejudice Should Not Be Tolerated." Variety, Variety, 3 Oct. 2020, variety.com/2020/music/news/bts-black-lives-matter-donation-1234789434/#!

38 Suntikul, Wantanee. "BTS and the Global Spread of Korean Soft Power." – The Diplomat, For The Diplomat, 4 Mar. 2019, thediplomat.com/2019/03/bts-and-the-global-spread-of-korean-soft-power/.

39 Ibid.

Korea's GDP at $4.65 billion. [40]

Moreover, during the administration of President Roh Moo-Hyun from 2003 to 2007, the declared prime nation objective was to become one of "the world's top five content powers in 2010" and the Korea Creative Content Agency was founded in 2009 to promote and support the production of Korean popular culture content. [41]The map of the agency's strategic bases for overseas business signifies the very much supported spread of Korean culture by the government.

BTS and Soft Power

South Korea and BTS best illustrates Wendt's constructivist culture and Nye's soft power. Furthermore, it exemplifies the cultural identities described by Wendt, particularly the "collective" identity. This is clearly displayed in the philanthropic contributions by ARMY to support causes like the Black Lives Matter movement as well as the relief and prevention efforts regarding COVID-19 to which BTS has donated. As Wendt asserts, an individual who has a "collective" cultural identity views the interests of others as their own.

Another aspect of the case of South Korea is the fact that it demonstrates two of Wendt's culture types – Kantian and Lockean. As Wendt describes Kantian culture, if one actor treats another as a friend, these actors will develop shared institutions among them and for South Korea, this is demonstrated in the act of the UN working with BTS to create the UNICEF campaign love yourself. On the other hand, the aspects of Lockean culture as described by Wendt, includes that the states must adhere to the sovereignty of each other at the status quo despite any conflicts they might have as well as the nature of rational behavior. This was demonstrated when BTS acknowledged the shared sacrifice of Americans and Koreans when they received the Korea Society's James A. Van Fleet Award, named after a U.S. general during the Korean War. [42]

In response, Chinese social media was outraged having perceived the message as a slight against Chinese soldiers in the war. China's state-owned tabloid, the Global Times, lambasted the group for its "one-sided attitude" that "negate[d] history," but this media offensive against the kings of K-pop barely lasted two days.[43] Global Times quietly deleted its articles criticizing

40 The Contrarian. "The Economics of BTS." The Contrarian, The Contrarian, 23 Sept. 2020, www.thecontrarianco.com/post/the-economics-of-bts.
41 Ibid.
42 Park, S. Nathan. "China Backs Off From Fight With K-Pop Fans." Foreign Policy, 20 Oct. 2020, foreignpolicy.com/2020/10/20/china-south-korea-bts-kpop-nationalism-soft-power.
43 Ibid.

BTS and the negativity against the group in Chinese social media also faded quickly. [44]

The case of BTS and South Korea also best exemplifies Nye's definition of soft power as "the ability to achieve goals through attraction rather than coercion." Instead of using a carrot and stick, South Korea has gained new soft power potential in 2020 as a result of BTS's rise that has relied on positive associations with South Korean culture, foreign policy and political virtues to attract others to its cause.[45]74 If used correctly, this newfound tool will enhance South Korea's influence on the international stage.[46]75 Furthermore, what South Korea has demonstrated in its case is cultural diplomacy, which soft power is the foundation of, mobilizing cultural resources.[47]

The promotion of soft power through cultural diplomacy is the shared purview of both governmental and nongovernmental actors, as illustrated in the complementary roles of the South Korean government, which incentivizes the production and diffusion of Hallyu content through its policies and directives, and the private enterprises that produce and promote the content, such as the entertainment company Big Hit Entertainment, which manages BTS.77 South Korean President Moon Jae-In also praised the success of BTS in spreading Korean culture around the world in a 2019 address. [48]

Beyond such official promotional measures of governments and corporations, the case of BTS also demonstrates the power of grassroots "people-to-people" diplomacy in spreading soft power.[49] People-to-people diplomacy happens when positive feelings about a nation or culture are spread through shared experiences between individuals across cultural divides.[50] The enthusiastic dedication of the global BTS fanbase is a pivotal factor in the bottom-up facilitation of the band's meteoric rise to international success, as the universality of themes featured in the band's lyrics that offer listeners solace in the face of personal struggles and encourage them to love themselves and speak for themselves.[51]

Conclusion

Generally, popular culture is not considered as something which would affect politics. However, as many have said in the past, everything is political. Any action we take or behavior we adopt achieves a goal based off a certain set of norms, values, and assumptions. It is clear that though it is possible for pop culture influencers to have a significant impact on a country's soft power. Furthermore, the relationship between the influencer and the government is significant in translating pop culture into soft power as seen with BTS.

44 Ibid.

45 Lee, Chung Min, and Kathryn Botto. "The Case for South Korean Soft Power." Carnegie Endowment for International Peace, 15 Dec. 2020, carnegieendowment.org/2020/12/15/case-for-south-korean-soft-power-pub 83406.

46 Ibid.

47 Suntikul, Wantanee. "BTS and the Global Spread of Korean Soft Power." – The Diplomat, For The Diplomat, 4 Mar.2019, thediplomat.com/2019/03/bts-and-the-global-spread-of-korean-soft-power/.

48 Suntikul, Wantanee. "BTS and the Global Spread of Korean Soft Power." – The Diplomat, For The Diplomat, 4 Mar. 2019, thediplomat.com/2019/03/bts-and-the-global-spread-of-korean-soft-power.

49 Ibid.

50 Ibid.

51 Ibid.

Why Washington Needs to Get Serious About Semiconductors

JEFFERY YOHAN KO

If we are to take a step back and analyze the implications of pandemic-accelerated supply chain shocks, we can more readily understand that these shocks were inevitable. In the specific context of semiconductors (integrated circuits/transistors/processing units), the disruptions to the fabrication process have demonstrated the need to explicitly define the intersection of innovation and interests. The discussion needs to shift from "semiconductors are important and vital for everyday life" toward a more grounded realism. Every step of the fabrication process, from the design to diffusion, presents unique challenges that require more nuanced discourse in the public policy sphere.

Investment in more advanced domestic semiconductor fabrication should be made mainstream particularly when discussing strategic competition with countries like the People's Republic of China (PRC). Trade wars and military capability buildup do not exist in a separate vacuum of instrumental modality. Semiconductors, both their capabilities and security, are vital components of communications networks, imagery and reconnaissance satellites, threat detection networks, naval ships, and of course, smart refrigerators. [1]Hardware-based encryption supplements software level encryption of data and code to ensure fewer methods of exploitation by ensuring ciphertext codes are communicated to a receiver who has a key to decrypt. For less complicated application specific integrated circuits, such as smart refrigerators (whose market share is set to double by 2025) or televisions, bleeding edge semiconductor technology is not necessary. With that in mind, almost all appliances/devices capable of controlling an integrated instruction program or sending/receiving signals contain some sort of application specific integrated circuits.

For this reason, the Department of Defense has awarded Intel a contract to develop, in conjunction with the Defense Advanced Research Projects Agency (DARPA), new structured application-specific integrated circuits to power more efficient and secure military-use microelectronics. [2]

However, that partnership represents only a fraction of the total number of units of secure microelectronics and networks that the military, and other agencies, utilize. Taiwan Semiconductor Manufacturing Company (TSMC) produces the most advanced processors that guide Lockheed Martin's F-35 Lighting II and supplies other manufacturers such as Xilinx

1 Arcuri, Gregory. "The CHIPS for America Act: Why It is Necessary and What It Does." CSIS, January 2022: csis.org/blogs/perspectives-innovation/chips-america-act-why-it-necessary-and-what-it-does

2 Eversden, Andrew. "Pentagon, Intel partner to make more US microchips for military." C4ISRNET, March 2021: c4isrnet.com/battlefield-tech/it-networks/2021/03/19/pentagon-intel-partner-to-make-more-us-microchips-for-military/

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(freshly acquired by AMD).[34]   For several CPU architecture generations now, Intel has been falling behind in node technology compared to TSMC, though it should be noted that this applies most specifically to desktop and server grade processors.[5] As modern capabilities require more computational power, strategic competition with the PRC continues to unfold in the military technology space.

The continued investment into more advanced semiconductor technology is critical for staying ahead of hardware vulnerabilities that stagnant development presents. In 2018, the security vulnerabilities Meltdown and Spectre were made publicly aware and raised discussions about the penetration process and payload type.[6] While the extent to which these vulnerabilities could present critical issues to military-use technologies is unknown, it is well-known that malicious actors can exploit a processor's internal buffers to extract encrypted information and keys. Though there has been no attributed actor, Meltdown and Spectre exploits have been detected in products from almost all major firms (Intel, AMD, ARM) ranging across several architecture generations. Aging military technology and the vast quantities of equipment that can store encrypted information mean that potential targets and exploits are likely more numerous than mainstream discourse makes it appear to be.
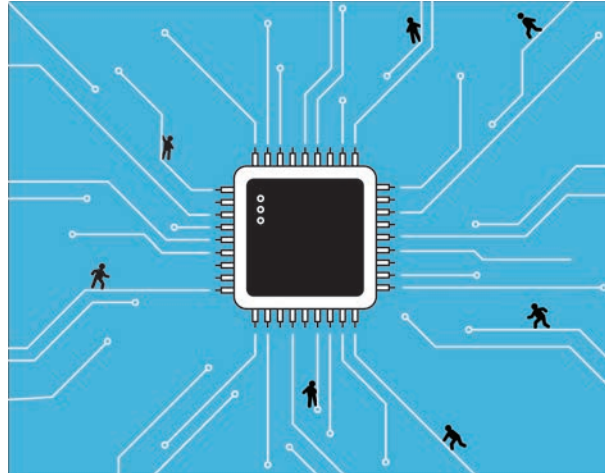
Given these realities, current partnership programs and Congressional funding for domestic semiconductor fabrication are woefully inadequate in addressing the tantalizing impact of sourcing the majority of electronic and circuit components from Taiwan, which has been subject to constant encroachment by mainland China.

Worse still, current legislative efforts are inadequate. For example, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act fails to address the timeframe in which its lofty ambitions fall subject to. And although passed by Congress last January, the act has yet to authorize any funding for the programs laid out in its mandates.[7]

Intel, meanwhile, is years behind the bleeding-edge node technology that TSMC has made readily available at the consumer level. For example, Intel has finally transitioned from nearly a decade of 14nm FinFET technology to 10nm (which it conveniently labeled Intel 7) whilst TSMC enters the final phases of its risk production of 3nm node technology. Intel designs and manufactures its own semiconductors, whilst TSMC supplies the physical die to fabless companies like Advanced Micro Devices (AMD). All these discussions continue as Congress has yet to agree on the actual allocation of funds to the programs designed to alleviate the issues I highlight.

3 Qi, Ciel. "Taiwan's bargaining chips." Techcrunch, December 2021: techcrunch.com/2021/12/02/taiwans-bargaining-chips/
4 Gartenberg, Chaim. "AMD's $35 billion Xilinx deal has gone through." The Verge, February 2022: theverge.com/2022/2/10/22927040/amd-35-billion-xilinx-deal-fpga-chips-regulators
5 Areej. "Intel's Foundries Expected to Lag Behind TSMC for At Least Another 4-5 Years." Hardware Times, February 2021: hardwaretimes.com/intels-foundries-expected-to-lag-behind-tsmc-for-at-least-another-4-5-years/
6 meltdownattack.com
7 Arcuri, Gregory. "The CHIPS for America Act: Why It is Necessary and What It Does." CSIS, January 2022: csis.org/blogs/perspectives-innovation/chips-america-act-why-it-necessary-and-what-it-does

The one element that permits this lengthy and on-going discussion is the fact that China has yet to successfully produce highly-advanced semiconductor technology domestically.[8] It has largely been forced to import the more advanced processors from the US and has significantly invested into the design, testing, and diffusion of semiconductors that are beyond the low-level logic chips that it currently produces in bulk.[9] And yet, that certainly is not to say that the current state of domestic semiconductor production in the U.S. can continue indefinitely.

It is time for Washington to seriously consider the future of its capabilities through the lithography of advanced computing. Because fabrication facilities are transistor technology specific, the transition from investment into actualization will take time. Challenges are also presented by the contrasting nature of the leading semiconductor manufacturers. AMD's architecture design is dependent on TSMC's node advancements and stability. Intel designs and validates their own processor architectures and is responsible for developing the node technology required to merge the instruction sets to hardware. Balancing security concerns with market competition ultimately requires government oversight with industry cooperation. While high-level contracts with semiconductor suppliers are likely insulated from supply-chain disruptions (as Apple was during the silicon shortage resulting from the pandemic), growing standoffs with China can affect the US' ability to consistently import processors from fabrication facilities in Taiwan. [10]

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8 Kharpal, Argun. "China is pushing to develop its own chips — but the country can't do without foreign tech," CNBC, October 2021: cnbc.com/2021/10/25/china-pushes-to-design-its-own-chips-but-still-relies-on-foreign-tech.html

9 Thomas, Christopher. "Lagging but motivated: The state of China's semiconductor industry." The Brookings Institute, January 2021:

10 Wu, Debby. "Apple Finally Falls Victim to Never-Ending Supply Chain Crisis." Bloomberg, October 2021: bloomberg.com/news/articles/2021-10-13/apple-finally-falls-victim-to-never-ending-supply-chain-crisis

Risks of Allocating Academic Resources Based on Socioeconomic Status

KEILANI BARBA

High school acts as the point in students' academic careers in which they decide whether to continue onto higher education or invest their time and efforts into the workforce in some way or another. Yet, what are the risks that coincide with resource allocation based off of socioeconomic status? And what potential methods may help to improve the outcomes of resource allocation to best promote student success?

Resource Allocation

While many laws, such as the No Child Left Behind Act, have attempted to eliminate the challenges of educational inequity, most students in lower socioeconomic classes still experience academic disparities.[1] In large part, this is due to the fact that only "8-9 percent of school budgets nationally" actually come from the federal government.[2] This includes funds that support lower income students such as Pell Grants and other grant programs initiated under the Obama administration.[3] Given that so little of school funding comes directly from the federal government, academic resource allocation is heavily reliant on property taxes.

Risks

One of the most relevant risks in this decision-making process, as seen in Los Angeles school districts in California, is the lack of transparency in regards to resource allocation. In July of 2019, Public Advocates filed a complaint that "more than $2 billion in funding intended for high-need students" was not allocated to those in need, and the budget did not accuracy reflect how this money was spent.[4] Furthermore, the education funding formula proposed by Governor Newsom for Los Angeles County, explained that it would only allocate an increased amount of academic resources to a school "when at least 55% of students are designated as high needs".[5] Distributing resources based on the school as a whole, may lead to an additional risk for individual students. For instance, if a student is able to transfer from a poor to a wealthier school, but still resides in a high-poverty neighborhood, they may need additional academic resources and support than the remainder of their peers in order to attain equitable academic

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1 The No Child Left Behind Act aims to minimize the achievement gap by providing students with equal access to higher equality education. See Washington Office of Superintendent of Public Instruction (https://www.k12.wa.us/policy-funding/grants-grant-management/every-student-succeeds-act-essa-implementation/elementary-and-secondary-education-act-esea/no-child-left-behind-act-2001)
2 Semuels, Alana. "Good School, Rich School; Bad School, Poor School." The Atlantic
3 Equity of Opportunity." Equity of Opportunity | U.S. Department of Education, https://www.ed.gov/equity.
4 Luu, Duc. "LAUSD Complaint." Public Advocates, Public Advocates, 17 Nov. 2020, https://www.publicadvocates.org/lausdcom-plaint/.
5 Fensterwald, John. "California's K-12 Funding Formula Likely to Change, but Disagreement over How." EdSource, EdSource, 4 June 2021, https://edsource.org/2021/californias-k-12-funding-formula-likely-to-change-but-disagreement-over-how/655552.

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opportunities and overall success. However, given Governor Newsom's plan, the student would not be able to receive this support since the school, presumably, would not reach the 55% high needs requirement.

It should be noted that academic resources are more often than not, provided to schools or programs in areas of higher socioeconomic status. A study of Chicago Public Schools conducted by Lisa Breger found that "Test scores are significantly lower for impoverished schools, indicating that these schools face higher pressure to meet state standards than neighboring schools with students from higher income homes."[6] Given this information, we assume that greater access to academic resources leads to higher test scores, and in turn may lead to a larger gap in academic achievement between socioeconomic classes/neighbors.

Academic Resource Allocation Proposal

In order to alleviate the issue of lack of transparency between the public and the local funding of the school districts, a secondary review process should be implemented. This may be in the form of a public volunteer group, local political or officials, or an academic committee consisting of local teachers and school staff.

This committee will serve to review and approve the proposed budget with the primary goal of ensuring that the allocation of funding and resources is equitable despite the school's socioeconomic status. Additionally, this group will ensure that all of the money given to the state or district by the federal and local government is accounted for in the final budget. Ideally, this will eliminate the lack of transparency in funding that was seen in Los Angeles County. If the committee chosen to conduct this task is varied, maintaining a diverse group of people from different socioeconomic districts and neighborhoods, than this process can also serve to eliminate any bias that may come into play when distributing property tax. Essentially, people in higher socioeconomic neighborhoods who pay higher property taxes will not have the authority or power to give all of that money to the schools in their areas, or vice versa.

It may also be beneficial to shift from a property tax-based funding to a state wide tax funding process. In other words, funding would not come directly from local property taxes, but would instead be based on state taxes. Therefore, once the state taxes are collected, they will then be distributed in a more equitable way by the state itself, rather than to local governments and then to the individual schools, as the process stands now. While this may hold some adverse consequences such as a change in state budgeting processes or lack of control on behalf of local governments, it may also enact positive change that leads to a more equitable society overall.

Lastly, but perhaps most importantly, is the need for clear risk communication on two levels. One, between school staff such as advisors, counselors, or teachers) and their students. The other, amongst experts across different fields as it pertains to the resource allocation decision-making process. One of the suggestions offered here is to collect student information regarding their financial situations and socioeconomic backgrounds in public high schools across the United States. This information would remain confidential, and would only be reviewed by the student's academic advisor/counselor and the school's principal. However, by providing these staff members with this information, they will be able to develop a better understanding of the student's personal situation and where more academic assistance/resources may be needed. [7]

In order to do this in the most efficient manner, the school can provide the student and their parents with a packet or survey to fill out, which should include their current address,

6 Breger, Lisa. "Poverty and Student Achievement in Chicago Public Schools." The American Economist, vol. 62, no. 2, Sage Publications, Inc., 2017, pp. 206–16, https://www.jstor.org/stable/26754415.
7 Price, Jennifer A. "Sharing Student Background Information with Faculty: Does It Make a Difference?" Graduate School of Education of Harvard University, ProQuest, 2012, pp. 80–95.

family income, and perhaps the student's past academic records and test scores. From this, the staff can assess the individual student's needs and suggest to the parent and student particular after school or in-school programs and/or classes that may help the student academically. These additional resources should be free of charge, as it should be regularly incorporated into public high schools, especially those considered to be of high need or in areas with high poverty rates. This is extremely important given that "One study reports that high-poverty students require 25 percent more resources than their peers" [8]

Another form of risk communication that can be improved moving forward, is the communication between experts in different fields when deciding on how resources should be allocated to public high schools within a state or district. Bringing in experts from economics, educational fields, as well as family or social workers would allow for a large range of perspectives on the topic of resource allocation. Additionally, this will ideally alleviate internalized costs.[9] Doing this should prevent bias amongst individuals who may live in the particular neighborhood or state being discussed, while also allowing for a better understanding of the economics for the academic experts that may not have as much knowledge on this particular aspect of the decision at hand.

While there is a common consensus about the value of education, the understanding of how allocation of academic resources plays a significant role in educational productivity and overall student success is not as often acknowledged.

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8 Roza, Marguerite. "Funding Student Types: How states can mine their own data to guide finance policy on high-needs students," Edunomics Lab - The Study of Education Finance at Georgetown University, https://edunomicslab.org/wp-content/uploads/2017/12/State-PP-funding-cost-FINAL-3.pdf.
9 Internalized costs in decision making are borne by the decision maker and can often lead to poor procedures in decision-making processes.

How Political Engagement Can Overcome Our Downswing

EVELYN DISALVO

In his book, The Upswing, political scientist Robert Putnam discusses at length how the United States experienced a peak of economic equality and collectivism in the mid 20th century and has since been in decline.[1] The current period of inequality, corruption, and individualism is remarkably similar to the Gilded Age and based on these similarities Putnam argues that we are ripe to begin another upswing like we experienced half a century ago.[2]

For the last half century collectivism and civic engagement has been in deep decline while individualism has become the guiding principle of American society. Putnam also documents how "social solidarity (membership in civic associations, churches, unions, and even family formation) was at a relatively low point during the first Gilded Age, began to rise during the Progressive Era toward a high point in the 1960s, and then declined steadily into the second Gilded Age."[3] Currently, we are experiencing extremely low levels of civic participation and this is closely tied to the high levels of individualism. In the U.S. today, people are much more concerned with themselves and their individual well-being than their community.

Putnam illustrates this individualism through an analysis of the rise of singular first-person pronouns in literature and media which he calls the I-we-I curve.[4] The trends of individualism and isolation can often reinforce each other. As people socialize less, they become more focused in themselves and even less likely to engage with their community.

In addition to increased social isolation, political isolation has also increased in contemporary America. Political scientist Morris Fiorina investigates political issues plaguing the U.S., specifically the problem of polarization. While many people believe the US has become more polarized, Fiorina actually argues that it is only the political class, composed of politicians, lobbyists, and activists, who have become more polarized while average Americans have maintained relatively stable positions.[5] This distinction is important because it exposes how "members of the political class who dominate politics in America not only are unrepresentative of the country at large, but also have the most distorted view of their country." [6]

The divide between the public and the political class is further exacerbated by the corrupt and selfish policies which politicians employ to avoid accountability. In his book Unrigged, David Daley discusses the many ways in which politicians rig the system to their

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1 Robert D. Putnam, The Upswing: How America Came Together a Century Ago and How We Can Do It Again (Simon & Schuster, 2021).
2 Ibid.
3 Ibid 110.
4 Ibid 12.
5 Morris P. Fiorina, Unstable Majorities: Polarization, Party Sorting, and Political Stalemate (Stanford, CA: Hoover Institution Press, Stanford University, 2017), 21.
6 Ibid 33.

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benefit explaining that "the toxic combination of gerrymandering and voter suppression laws passed by newly unaccountable legislatures tied our democracy into a profoundly depressing double-knot of unfairness, and established nearly unbeatable minority rule in otherwise competitive states." [7]

According to Merriam-Webster, to gerrymander is "to divide or arrange (an area) into political units to give special advantages to one group."[8] Gerrymandering allows politicians to guarantee that they or their party will win an election despite the fact that they do not represent the political views of the district they are representing. Gerrymandering can create unresponsive districts where despite changes in statewide partisanship, individual districts do not change parties and legislators are unrepresentative.[9] Furthermore, gerrymandering often divides communities of interest which threatens the political agency of those communities by diluting their voice.[10] However, despite the negative effects on voters, politicians continue to gerrymander to their benefit.

Gerrymandering exemplifies the gap between average Americans and the political class because while politicians benefit from gerrymandering, Americans across the parties are opposed to it. As discussed above, in the book Unstable Majorities, Fiorina exposes the gap between the highly polarized political class and the relatively moderate general public. This separation between the preferences of the political class and the public is also found in views on gerrymandering. As Daley points out in Unrigged, "In 2018, polls found that upward of 70 percent of Americans hoped that the high court would help defend American democracy by reining in partisan

"Gerrymandering exemplifies the gap between average Americans and the political class because while politicians benefit from it, Americans across the parties are opposed to it."

gerrymandering."[11] So it is clear that a majority of Americans are opposed to gerrymandering regardless of political party. However, significant amounts of legislators must obviously be in support of gerrymandering based on the fact that they have implemented it in their own states. Legislators who continue to gerrymander are not only shirking their responsibility to uphold democracy through the undemocratic act of gerrymandering but also through their continuation of a practice which is vocally opposed by the majority of their constituents.

Redistricting commissions are the clearest solution to fairer redistricting processes and thus a more representative democracy. One key component of commissions is deciding who can serve on them. Commissions which prohibit elected officials and lobbyists from serving allow for more participation by average Americans and prevent the political class from dominating political processes.[12] Furthermore, requirements for public input beyond the commissioners also promotes engagement by allowing all voters to have a say in defining their communities

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7 David Daley, Unrigged: How Americans Are Battling Back to Save Democracy (New York, NY: Liveright Publishing Corporation, a division of W.W. Norton & Co., 2021), xvi.
8 "Gerrymander," Merriam-Webster (Merriam-Webster), accessed May 10, 2021, https://www.merriam-webster.com/dictionary/gerrymander#h2.
9 Jonathan Cervas, "Districting Terminology." Representation and Redistricting. Lecture,
 (2021), 37-39.
10 Ibid 21.
11 Ibid xxi.
12 Michelle Davis et al., Redistricting Law 2020 (Denver, CO: National Conference of State Legislatures, 2019), 93.

and drawing districts.[13] A handful of states have already implemented commissions and they have created significantly more representative districts. In Unrigged, Daley states that "more than three-quarters of the congressional seats that changed hands in 2018 were drawn by either commissions or courts."[14] This means that these districts were more responsive, more competitive, and ultimately more democratic. Commissions are perhaps the most obvious solution to more fair districts because they minimize the power of the political class and maximize the power of the public.

       Another method to fight gerrymandering is to make districting software and analysis more accessible. By making this software publicly available and easy to use, an even wider variety of people could participate in the redistricting process by proposing new district maps or critiquing the fairness of existing ones. Recently, software like Dave's Redistricting App and Draw the Lines have allowed anyone with internet access to create their own district maps.[15] Furthermore, many scholars have expanded their discussion on gerrymandering from academic journals to more accessible news media sources. For example, Samuel Wang's article "How the Courts can Objectively Measure Gerrymandering" explains the basics of the seats votes curve to the readers of The Atlantic, thus making the science of redistricting more accessible to the general public.[16] However, public education on gerrymandering is far from adequate and those who are literate in the science of redistricting must continue to make academic discourse comprehensible for the general public.

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13 Ibid 96.
14 Daley, Unrigged, 105.
15 Dave Bradlee et al., "Daves Redistricting App 2020," Daves Redistricting, accessed May 10, 2021, https://davesredistricting.org/maps#home.; "Home." Draw the Lines PA - How to slay a gerrymander. Accessed May 11, 2021. https://drawthelinespa.org/.
16 Sam Wang, "Gerrymandering, or Geography?," The Atlantic (Atlantic Media Company, March 26, 2019), https://www.theatlantic.com/ideas/archive/2019/03/how-courts-can-objectively-measure-gerrymandering/585574/.

Feminist International Relations Theory and the Covid-19 Pandemic

MARISSA BALDAUF PEKULAR

Globally, women are experiencing a different pandemic than men. Although Covid-19 continues to have a significant impact on global economies, women around the world are disproportionately affected, as they are being displaced from the workplace and pushed into poverty. Feminist International Relations theory encapsulates this global phenomenon as it places women at the center of analysis and prioritizes the female experience in international relations. As the pandemic persists, the economic disparity between men and women will continue to widen, heightening global gender inequality.

Feminist International Relations theory challenges the androcentric, patriarchal values of international relations theories. This male-dominated study does not consider gender as an influential factor and it largely ignores the female experience. Meaning, women's marginalized social status, lack of decision-making power, and collective identity are neglected from traditional IR theories and the study as a whole. Early feminist theorists sought to reform the study by recognizing womenkind as an influential factor in international relations. Feminist IR theory deconstructs prevailing gender norms and patriarchal values while recognizing the impact that women have in the international community. By considering gendered power dynamics, heteronormative, patriarchal norms, and institutionalized gender inequalities, this discipline makes women visible in a traditionally gender-blind field. This theory is key in analyzing the global gender economic inequalities that are a result of the pandemic.

Before the pandemic, women were already disadvantaged economically. In the years leading up to 2019, the start of Covid-19, women comprised the majority of the world's poor, earning less than men and having limited access to economic opportunities such as career-oriented, decent work. Covid-19 exacerbated these inequalities further. According to Madgavkar, Anu, et al, "[W]omen's jobs are 1.8 times more vulnerable to this crisis than men's jobs. Women make up 39 percent of global employment but account for 54 percent of overall job losses." [1]

This stark disparity is attributed to two main causes. First, according to the U.S. Global Leadership Coalition, women are more likely to work in the informal economy which is comprised of jobs that are not protected or regulated by the state. These insecure positions do not offer paid leave, contracts, or flexibility in working from home. This sector was significantly affected by the pandemic. For example, according to the U.S. Global Leadership Coalition, "[W]omen make up 80% of domestic workers, and 72% of domestic workers have lost their jobs as a result of the pandemic." [2]

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1 Anu Madgavkar, Olivia White, Mekala Krishnan, Deepa Mahajan, and Xavier Azcue, "Covid-19 and Gender Equality: Countering the Regressive Effects," McKinsey & Company, April 10, 2021, https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects.
2 "Covid-19 Brief: Impact on Women and Girls," U.S. Global Leadership Coalition, August 31, 2021, https://www.usglc.org/corona-virus/women-and-girls/.
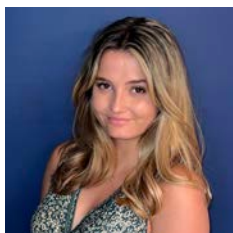
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Additionally, according to UN Women, women comprise the majority of single-parent households and also are more likely to be responsible for unpaid childcare and domestic work (UN Women 2021).[3] Women were majorly burdened with childcare and domestic work during the pandemic, resulting in them leaving work to fulfill these gendered duties. According to Bloomberg Equality, "Globally, women took on 173 additional hours of unpaid childcare last year, compared to 59 additional hours for men."[4] These disparities, however, are only heightened for minority groups. For example, according to the Bloomberg Equality report, Pakistani women spent 390 hours in unpaid childcare during the pandemic while men spent only 36 hours in childcare.[5] As women did three times as much childcare as men during the pandemic globally, their careers and jobs were disproportionately sacrificed, which contributed to the gender economic equality gap.

> *"Women did three times as much childcare as men during the pandemic, with the result that their careers and jobs were disproportionately sacrificed."*

While women are disproportionately hindered socially and economically by the pandemic, the global economy as a whole also suffers. According to a report by McKinsey & Company, "Global GDP growth could be $1 trillion lower in 2030 than it would be if women's unemployment simply tracked that of men in each sector."[6] If the pandemic would have affected men and women in their work equally, the global economy would be considerably better off. The economic impact could be much more severe than this estimate, however. Modeled factors such as childcare burdens, social bias, social spending, and recovery rate could vary dramatically. Conversely, if there were to be global reform regarding gender economic activity as it relates to the pandemic, an additional $13 trillion could be added to the global GDP by 2030 according to the same report.

Feminist International Relations theory can elucidate this crippling global dilemma. According to feminist theory, state-structured hierarchies exist in which masculine institutions are prioritized over feminine institutions. For example, as women are likely to work in the informal labor market such as domestic care, states neglect this sector while prioritizing male-dominated domains such as the military and STEM. Additionally, feminist IR theory challenges moral considerations in the discipline. While realists believe that morality is not an influential factor in international relations, feminist theorists claim that morality is a vital consideration. According to E-International Relations, "[Issues of morality are] adopted by many feminists and gender theorists who try to challenge the emotional-rational binary, which they see as

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3 "Covid-19 and Its Economic Toll on Women: The Story behind the Numbers." UN Women, 2021, https://www.unwomen.org/en/news/stories/2020/9/feature-covid-19-economic-impacts-on-women?gclid=Cj0KCQiA2NaNBhDvARIsAEw55hgD4rjp6Q5tAc98zkz9izCNK2cw__hg27SmWpXxGsfx1pZ-mi2sNAkaAk_1EALw_wcB.
4 Shera Avi-Yonah, "Women Did Three Times as Much Child Care as Men During Pandemic," Bloomberg.com, June 25, 2021, https://www.bloomberg.com/news/articles/2021-06-25/women-did-three-times-as-much-unpaid-child-care-as-men-during-covid-pandemic.
5 Shera Avi-Yonah, "Women Did Three Times as Much Child Care as Men During Pandemic," Bloomberg.com, June 25, 2021, https://www.bloomberg.com/news/articles/2021-06-25/women-did-three-times-as-much-unpaid-child-care-as-men-during-covid-pandemic.
6 Anu Madgavkar, Olivia White, Mekala Krishnan, Deepa Mahajan, and Xavier Azcue, "Covid-19 and Gender Equality: Countering the Regressive Effects," McKinsey & Company, April 10, 2021, https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects.

corresponding to the female-male dichotomy."[7] Meaning, feminists regard morality and ethics as contributing factors to IR theory in an effort to challenge traditional male-dominated theories such as realism. In considering morality, feminist theorists can question the social standards and justice regarding the global gender economic equality gap exacerbated by the pandemic. For example, there is no rational or quantifiable explanation as to why women are expected to be primary caregivers during the pandemic. Because women are socially perceived as domestic in nature due to antiquated gender norms and patriarchal standards, this issue can be challenged and explained by incorporating morality.

As the pandemic continues, women around the world disproportionately suffer economic setbacks. In confronting gender norms and institutionalized social inequalities, however, feminist IR theory provides an explanation for this global phenomenon.

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7 Lilly Felk, "The Call for a New Subject: Gender and the COVID-19 Pandemic." E-International Relations, June 19 2020, https://www.e-ir.info/2020/06/11/the-call-for-a-new-subject-gender-and-the-covid-19-pandemic/.

Five questions for Army War College Fellow LTC Steve Curtis: The Civil-Military Relationship and the Future of Warfare

ALEXANDRE GANTEN

Lieutenant Colonel Steven Curtis, the 2021-22 Army War College Fellow, is a career military intelligence officer in the United States Army. LTC Curtis served as a battalion commander and as a legislative assistant to the Joint Chiefs of Staff, among other roles. He has a master's in Legislative Affairs from George Washington University and a master's in strategic intelligence from American Public University.

Question 1: You have worked in Washington, both as a Defense Fellow for a United States senator and for the Joint Chiefs of Staff, how aware would you say policymakers are of realities on the ground for the troops? Are there any distinct knowledge gaps? And if so, can anything be done to remedy them?

LTC Curtis: It's pretty well documented that Congress does not have good representation from former service members. The percentage of former service members serving as Congressional staff is probably higher, but it's also not very high. This means that neither the members of Congress, nor the staff who do a lot of the advising have direct experience with defense, any more than the average US citizen does. There is a lot of knowledge that goes with defending the nation across the profession of arms, much of which is specific to each service. There is a significant knowledge gap between policymakers and how service members handle the nation's business.

The knowledge gap is an issue specifically when forming policies relating to bureaucratic elements of defense. Many Congressional members represent districts that host bases or go on congressional delegations and gain exposure to the challenges that soldiers or sailors face. But in terms of how the Army runs, plans, the acquisition process, and other processes are the areas of greatest inexperience and it is a problem for two reasons. Poor experience and knowledge inhibit Congress's ability to provide oversight. Second, limited knowledge hampers members' ability to write legislation. Instead, members of Congress and their staff end up relying on the Department of Defense to draft laws to govern itself.

Now, there is a deliberate effort by the Department of Defense to try to fix this knowledge gap, and that's why it sponsors congressional delegations and has leaders testify. Personally, I think former service members need to start running for office and working on Congressional staff.

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It would be great if more servicemembers found value and pursued this vital form of public service after their time in the military.

Question 2: Over time, the number of people serving in uniform is declining relative to the whole population. When you joined in 2003, there were 498,000 people on active duty in the US Army, compared with 486,000 today. Meanwhile, the population of the US has grown by more than 40 million people. Do you think this has diminished the civil-military relationship? Are there fewer points of contact between the military and society than when you joined?

LTC Curtis: There is a lot of literature on the growing civilian-military divide. It is ingrained in our military that we are subordinate to civilian control. It is an important part of United States democracy that is not shared globally. So, when society does not fully understand what it is asking the military to accomplish, do conflicts like Afghanistan surprise the citizenry?

A 2015 article from the Atlantic called "The Tragedy of the American Military," discussed how the civilian-military divide is growing and how there is a level of almost detrimental support for the military.[1] People feel good about things like military discounts, military appreciation days, and those kinds of things. But the author argues that these things make it so that one can't question the military and that we risk ceding control of it. One byproduct is people who support the military vocally, but will not allow or encourage their son or daughter to join it. That's not healthy.

When we're looking at why this is occurring, we would probably have to start with Vietnam. But more generally, the continuous presence of war has had a hand in that. The images of wounded veterans and stories of sacrifice and PTSD build compassion, but also fear. In the military, we are called to support the Constitution, and that potentially means laying down one's life for it. Many people are uncomfortable with their children dying in a war. This is natural, even if the statistical odds of dying in the last war were possibly less than staying at home.

This leads to the U.S. Army struggling with hitting its recruiting goals recently, leading to a push to improve our recruiting. In particular, there are a lot of headwinds towards getting more diverse talent from underrepresented groups. There are some major issues that need to be faced: how many people can actually join the military and not be physically disqualified, or disqualified for prior conduct, or a medical reason, etc.

But there is a big Army initiative right now to improve diversity and recruiting in general. Outreach is important to achieving these goals. ROTC and JROTC are good programs, and expanding those are important. We have to expand outreach beyond typical bastions of support, like the southern states, because national security is a shared problem.

Question 3: What has been your experience of the civil-military relationship throughout your career? How integrated have you been into the different communities that have surrounded where you are stationed?

LTC Curtis: I'll start by saying that civilian-military is a big umbrella. There is the civilian-military of Congress, policymaking, and national security. Then there are the day-to-day interactions,

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1 James Fallows, "The Tragedy of the American Military," The Atlantic, January/February 2015, https://www.theatlantic.com/maga-zine/archive/2015/01/the-tragedy-of-the-american-military/383516/

in a store or in the community more generally. Support for the American military has been very good the entire time that I have been in the service. Since 9/11, we had a groundswell of support for the military and first responders, even if some of that has diminished over time. In the community, it has been good, and it is important that members of the military give back to the communities that house them.

On the Joint Chiefs side, a lot of 30-year general officers had the new experience of interacting with 30-year-old civil servants who had different backgrounds. The experiences were quite different, but they had good perspectives and were very smart. That opened my eyes to the value of different experiences and perspectives to improve outcomes. We cannot lose sight of the military subordinance to civilian control. Yet, there is the responsibility that comes with civilian control – you have to be a good steward of the military and make good use of it.

Question 4: Carnegie Mellon University has been at the forefront of many developments in military technology, up to and including taking the lead in the Army's A4I research. As a military fellow, have you been able to witness any of these developments? And what do you view as the technology that has the most potential to change the landscape of warfare over the next decade?

"I think warfare in 10 to 15 years is going to require computer-centered analysis."

LTC Curtis: CMU has been awesome for me. I did not have a lot of exposure to the ongoing innovation and I did not realize Pittsburgh was such a hub for that innovation. I did not know about the defense initiatives here, like the AI Taskforce, the Software Engineering Institute, and the National Robotics Engineering Center.

Up until now, I would opine how the Army needed to do more to innovate, not realizing that the Army is doing more. There is a lot of investment to improve technologically, and there are a lot of really smart people behind these innovations. Just being at Carnegie Mellon, I now understand what AI is and is not. I understand what machine learning is and I understand the algorithms and coding languages behind it. I fully grasp the limitations of robots and how hard it is to imitate humans, especially in ground warfare.

In terms of what I think has the most potential change to warfare, it is automated analysis through AI. I now understand just how much of a problem for the military, big data presents. I did not understand terms like data wake, which is the data footprint that soldiers and their equipment leave. I did not realize how commercial intelligence is, with satellites and machine learning, allowing for data to be quickly assembled but exceeding human capacities to analyze it. I think warfare in 10 to 15 years is going to require computer-centered analysis. A human will not be able to go through farming, collecting, and analyzing the available data to answer questions at the required speed. It will require trust in machines for intelligence, which is going to require a culture shift for the military.

On the robotics front, we're not going to make robots to replace soldiers any time soon, but we will make ones that augment them and make them that much more effective and survivable. Still, on the intelligence front is where technology is going to shift the most.

Question 5: How has the Army changed technologically over your time in service? Moreover, as

someone who started their career as an Infantry Officer, what do you feel is the role of Infantry on the modern battlefield?

LTC Curtis: At its core, the business of the Army is to close with and destroy the enemy. That has not changed. Technology has changed how we might do that, but the fundamental objective and execution are the same. And the Army still revolves around the Infantry. Future war will require more people, not less. Human-less warfare is not something that is going to happen.

How has it changed? There is now a lot more tech that a soldier has to carry around. So, all these neat technologies have increased the load that soldiers have to carry. The amount of information available to a soldier is much greater than it once was. That's a much greater cognitive burden on infantrymen. Now they have all these inputs coming in from communications channels and computers and they have to process that at a very human, micro-level. Space is a factor as well, moving from just GPS to overhead ISR from air and space. All of this information is being pushed down to the lowest levels due to technology. This increases the capabilities at a tactical level, but also increases the responsibility there. The Army is also increasing its range, fighting over the horizon.

We have to figure out how to ease the information burden on the lower level, tell them what they need to know rather than giving them everything. There has to be a funneling that occurs. We also don't have enough analysts to do all the intelligence work. We need to get machines to augment that capability better than we are now. Oh, and find a way to lighten their rucksacks.

The opinions and ideas presented are LTC Curtis's and do not reflect an official U.S. Army or Department of Defense position.

Five Questions for Naval Fellow CDR Kimberly Manuel: Military service from one generation to another

HAILEY MCDONALD

CDR Kimberly Manuel, the 2021-2022 Navy Fellow, is a Foreign Area Officer, most recently served as the U.S. Naval Attaché in Romania and then temporarily as the Acting Defense Attaché in Lithuania. A graduate of Vanderbilt University where she received her Navy commission through ROTC, Manuel began her career as a Surface Warfare Officer and completed two sea tours in USS Pinckney (DDG 91) as the Anti-Submarine Warfare Officer and USS Ponce (LPD 15) as the Navigator.
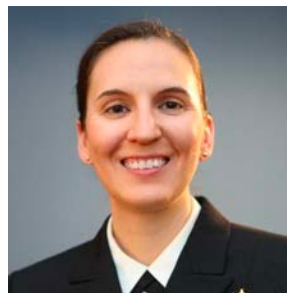
Question 1: As a second-generation military member, did early exposure to service and the military lifestyle influence you in deciding to join the Navy? Do you feel that it would be beneficial to expose more young Americans to these principles?

CDR Manuel: My father's service definitely influenced my desire to serve in the Navy. In the simplest sense, when it came time to consider what I should do after high school, I faced the dilemma of how to pay for college and what to study that would put me on a path towards a rewarding career.

When I envisioned my future, the Navy seemed a natural fit because I had lived my entire life surrounded by it and members of the U.S. Navy and Marine Corps. These people are incredible. I grew up moving every three years (roughly), I went to seven different schools, which isn't even a lot compared to some military brats. But everywhere we went the military members surrounded us with camaraderie and support, making our transient lives somehow not feel so disjointed. These families recognize that no matter how different we are, we are all sharing a unique experience, coming and going all the time. We are all at different stages in life, packing to leave, just arriving, starting a career, ending it, leading following, and at some point, we've all been there. I think this attitude of empathy and compassion is what drew me to the military.

It might sound strange to think of these as characteristics of the military, but I have seen how members of the military come from all parts of the United States, and even foreign countries looking to earn citizenship, sharing this attitude that the United States is a place and idea worth sacrificing for because of all it has offered them. There is a sentiment of gratitude and hope that I enjoy being surrounded with, not to mention a no-nonsense, let's get the job done, mentality I can relate to. You can probably tell how I would answer the second part of your question from

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my statements. Yes, I think any Americans would benefit from an environment of acceptance of others, service, and hard work.

Question 2: Throughout your experience in the Navy, was there ever a time when you did not feel fully prepared to complete the assigned task or take on a specific role? If so, how did you overcome this obstacle?

CDR Manuel: I am sure there have been multiple times when I was not prepared in the Navy! To name one that stands out the most, was when I reported to my first ship to lead Sailors. I was fresh out of college and was not quite sure how four years of Reserve Officer Training Corps (ROTC) and a degree in Russian and European Studies was going to help me lead a division of 30 sailors, most of whom were older than me, and had certainly been in the Navy longer than me. It is a humbling and challenging experience that all young officers probably experience. You've had the leadership training and read the manual so to speak, but actually building a team and leading people to accomplish a mission is tough, and differs for every person and in every situation.

"Actually building a team and leading people to accomplish a mission is tough, and differs for every person and in every situation."

In my case, I tried to apply all the things I had learned in ROTC, but remind myself there were things to learn each day on the ship too. I fortunately, was blessed with not just one, but two amazing Chief Petty Officers, 'Chiefs', which if you know anything about the Navy you will know is the person to whom you go to "ask the Chief!" They were a wealth of wisdom, so I tried to learn from them, while knowing at the end of the day, I was in charge, and the tough decisions were mine. Coming into a situation eager to learn, do my best, and genuinely being interested in seeing my sailors excel, both professionally and personally was my approach, and I think my division recognized that and ultimately made us successful.

Question 3: According to Brave men and timid women? A review of the gender differences in fear and anxiety by Carmen P. McLean and Emily R. Anderson, "Compared to men, women are more likely to overestimate the probability of danger, to expect harm, and to anticipate poor coping ability." The Department of Defense Diversity and Inclusion Strategic Plan 2012-2017 notes

> An all-volunteer force must represent the country it defends. We will strengthen our commitment to the values of diversity and inclusivity, and continue to treat each other with dignity and respect. We benefit immensely from the different perspectives, and linguistic and cultural skills of all Americans.

As a whole, do you feel it is advantageous to have females in a wider range of roles in the military, such as on submarines?

CDR Manuel: Honestly, I have a tough time with gender questions, probably diversity questions too. I think I tend not to notice – regarding gender, sometimes I haven't noticed I was the only

woman in a room until someone pointed it out. In recent years, I have had a couple of tours with the Department of State, and I have been struck by the fact that I look up and am surrounded by women, and that feels pretty good too. My experience has been that I was always treated as simply one of the team. If anything, as a junior officer, male commanders seemed to expect more from the females regarding maturity. I am fortunate to have worked for some pretty good bosses, who were simultaneously challenging me and advocating for me.

As for the study -- the Department of Defense Diversity policy -- I think sometimes we focus too much on the things that make us different. We certainly need to be willing to pull military members from all the population, otherwise we limit our capabilities. However, I think embracing diversity is more than just looking for people who fit into a certain category and drawing from their ranks, it's about accepting the people around you without caveat and harnessing all the skills and ideas that they can contribute. In the military you have a group of people who come from all backgrounds and types, but they have all come together in one purpose, and they each have something to contribute. The team is stronger when its members have an attitude that recognizes that each individual has value and something to add. Ultimately, if members don't treat each other with respect and take advantage of all that talent then the team will never reach its potential. Attitude makes the difference.

Question 4: General Robert Barrow, 27th Commandant of the Marine Corps, said the following in his 1991 speech before Congress:

> I know in some circles, it's very popular to ridicule something called male bonding. But it's real, and one has to have experienced it to understand it … And that would be shattered. That would be destroyed. If you want to make a combat unit ineffective, assign them women to it. It's a destructive proposition…. problems that result from such situation [women in combat]…sexual harassment, fraternization, favoritism, resentment, male backlash, all of these things would be an insurmountable problem to deal with."

The Marine Corps Integration Plan - Summary: "Findings from the physiological assessment of GCEITF males and females conducted by the University of Pittsburgh's Neuromuscular Research Laboratory include:
- Body composition: Males averaged 178 lbs., with 20% body fat: females averaged 142 lbs., with 24% body fat
- Aerobic Capacity (V02Max): Females had 10% lower capacity; the female top 10th percentile overlaps with bottom 50th percentile of males
- Within the research at the Infantry Training Battalion, females undergoing that entry level training were injured at more than six times the rate of their male counterparts."

Given these concepts, as well as other factors, do you feel it is advantageous to have females in physically combative roles in the military?

CDR Manuel: Some people don't like to hear that men and women are different. But we just are. But then again so is every individual person. I read a book a few years ago called, "Ashley's War," which is the story of the first team of female soldiers who served alongside Special Operations teams on the battlefield in Afghanistan. I mention the book because it's the incredible story of a group of women who were more physically capable than most men I know, but could not at the time serve in the Special Forces. Instead of looking at all the things that they weren't able

to do, they had a level of dedication to duty that pushed them through arduous training and allowed them to play a critical role in building relationships with Afghan women because they could go places and do things that male soldiers could not. They helped change the tide of the war, and Ashley White, for whom the book bears its name, died in combat making a difference by contributing to the U.S. military in a way only she could. As I mentioned previously, I think that each person who joins the military has something to contribute, in whatever capacity it leads them.

Question 5: In your opinion, are there still unequal opportunity levels for men and women in the military?

CDR Manuel: Yes, but I think that is true for every person. There are a thousand choices and timings that take our career paths to different places and levels. For a while now, I have been unplugged from "Big Navy," as we would call the affiliation with a standard U.S. Navy command or organization, so I don't know the current statistics, but clearly, the military in general is a male dominated profession, and I think men tend to have longer careers for a variety of reasons. In my experience, I think the Navy tries pretty hard to promote based on merit, because ultimately it recognizes, having great service members and leaders is what makes our military the best.

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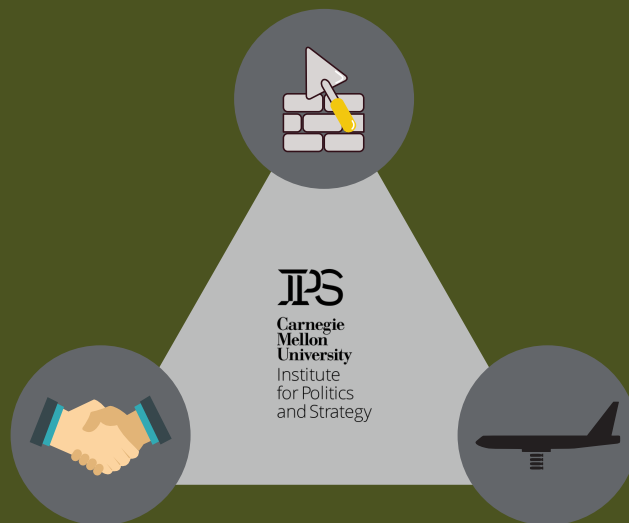
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Five questions for Coast Guard Fellow CDR Fred Bertsch: Maritime supply chain is not just a problem due to the pandemic response

JAMES WONG

Commander Fred Bertsch, the 2021-22 Coast Guard Fellow, assumed the duties as Commanding Officer, Coast Guard Cutter VIGILANT (WMEC-617) in June 2019. As Commanding Officer, he led the officer's and crew of VIGILANT through one alien migration interdiction patrol supporting District Seven, and five counter-drug patrols under the control of Joint Interagency Task Force South. Commander Bertsch is married to Jessica Burger. They have three children.

Question 1: Your role in the United States Coast Guard puts you in a unique position relative to our other fellows. Since the Coast Guard normally operates under the Department of Homeland Security (DHS), what perspectives do you bring to conversations about national security that our other fellows might not?

CDR Bertsch: I was pleased and eager to be the first Coast Guard Fellow here at Carnegie Mellon University and join the team. I think the Military Fellows Program here offers a mutually beneficial opportunity for both the school and for the fellows and military services. Each fellow comes in with some shared perspectives from the joint nature of service within the military, but each also has their own unique views based on the individual services they are representing, their experience and service within their organization, as well as their own backgrounds outside of the military.

I do not view myself as an exception in that regard; however, I do think being a Coast Guard officer and part of DHS gives me some interesting and different perspectives and experience to draw from. For instance, the Coast Guard has a broad set of authorities and missions that the services within the Department of Defense do not, ranging from law enforcement to regulatory. This has given me opportunities to be involved in a wide range of activities and apply a diverse set of solutions to challenges and problems that some of the other fellows may not have had. Similarly, as the Coast Guard is one of the component agencies within DHS, it has opened a plethora of opportunities for coordination and partnership on issues in a variety of ways that is not always available for the other military branches.

To an extent, because of the Coast Guard's size and budget constraints as well, the Service has

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had to become adept at efficiently and effectively solving challenges with limited resources through policy, partnerships, and unique applications of the Service's roles and authorities. These types of experience have helped shape my views and perspectives in slightly different ways then my counterparts so that I have some distinct insights to offer regarding national security, interagency coordination, and policy.

Question 2: Our definition of war has been evolving rapidly in recent years. Our adversaries continue to try to engage us in the gray zone and formally declared 'war' feels like less of a possibility (although in the case of Ukraine, we have seen that conventional war is still a concern). Where does the Coast Guard fit in terms of these challenges in the 'competitive' environment?

CDR Bertsch: It is an interesting time that we are living in with many diverse trials. I think it will take time and careful analysis to really flush out whether we are changing the definition of war or simply recognizing different degrees or levels of challenges on a broader spectrum of conflict. Regardless, I do think there are significant trends that indicate we are entering or have already begun a period which will be an ever present 'competitive' environment with challenges in gray zones where hostilities or conflict occur on subdued levels below the threshold of declared 'war' more frequently.

I think this represents an area where the Coast Guard provides exceptional value. The broad range of missions, roles, and authorities inherent within the Service allows the Service to engage in wide variety of methods beyond those available to the other services. This is one of the strengths for the Coast Guard as the Service is able to engage other actors without the same risk of escalation. This is possible for numerous reasons. One of the main reasons this is possible is because we can engage in alternative capacities besides simply as a military service. Our humanitarian missions, law enforcement roles, and regulatory authorities opens up opportunities for us to engage other nations and organizations in a wide variety of shared topics and interest in a less threatening manner.

For instance, the Coast Guard frequently engages and works with other nations addressing issues like illegal, unreported and unregulated (IUU) fishing, narcotics smuggling, and safety of life at sea. Additionally, because this type of work is constantly ongoing, the Service remains engaged with leaders from around the world, continually building relationships, trust, and partnerships that enable the Service and the nation to take action with reduced threat of provocation or escalation. For instance, the Coast Guard routinely engages in forums like the Arctic Council and the North Pacific Coast Guard Forum and with key maritime stakeholders like the International Maritime Organization. Additionally, the U.S. Coast Guard is often a better counterpart and contemporary service to other nation's navies and coast guard organizations so there are numerous opportunities for training and professional exchanges.

Question 3: I read your article focusing on improving the resiliency of the maritime supply chain. As a native of Los Angeles, I've been tracking conversations on how the ports have been. One bottleneck we're seeing is not having enough infrastructure to get containers onto trucks or trains. Do you see there being the political appetite to invest in the reform necessary to improve our infrastructure at that scale?

CDR Bertsch: It's tough to speculate about political appetite and what the political environment is going to support at any given point, but I do think there is broad and growing recognition

that more can and should be done to address our ports and supply chain infrastructure. We have already seen some action with the passage of the bipartisan infrastructure bill which provided additional funding for port security, cybersecurity, and investments in ports. These efforts will take some time to help alleviate our current issues but they will help. Beyond just that though, I think there are many aspects of this issues that will continue to be addressed to help permanently relieve the congestion and build resiliency within our ports and supply chain systems to avoid future issues.

This does not and will not simply rely on political outcomes at the federal level though either as addressing these problems will involve stakeholders and decision makers throughout all the entities involved in these networks and operations. Everyone from political officials at federal, state, local, territorial and tribal levels to private industry and consumers will all need to be involved and help determine the path forward and where priorities should be. I think the current situation highlighted some of the flaws and weaknesses in the system as it currently operates, so hopefully we will all collectively use that as an eye-opening experience to help facilitate action in addressing the issue. The maritime transportation system is critical to our nation, as evidenced by the past two years, and the recognition of that provides us a great opportunity to improve it and establish resiliency to prevent future issues. Hopefully, the current situation generates continued action and efforts to improve the situation over the long-term as even small disruptions can have significant impacts within the interconnected global economy.

Question 4: I'd also like to hear your thoughts on supply lines, particularly in and around the Indian Ocean. With India potentially moving towards a blue water navy, China seeking to expand control in its surrounding oceans and needing to provide security to maintain connections to Africa for Belt and Road Initiative, how do you see the role of the U.S. maritime power developing in this region?

CDR Bertsch: Obviously there has been increasing focus and emphasis placed on the Indo-Pacific region, particularly in the maritime domain, over the past few years. There is no doubt that China draws a lot of attention in the region with their activity and claims, but it is important to recognize that there are a lot of other significant actors and action occurring there are will with India being a major one. As the largest democracy and with a strategic location and significant maritime vector, India plays a major role in the region. This is likely to continue and probably grow as India seeks to expand their capabilities and capacity. This could create the possibility for more international incidents and misunderstanding as interactions increase, but it also presents potential opportunities for positive involvement of U.S. maritime power. While U.S. maritime forces have already been very active in the region, these developments provide additional opportunities to establish and expand our partnerships.

Building partnerships and conducting joint operations in the region is an area where I see positive options for U.S. maritime forces. This can be in the form of international military training and exercises, professional exchanges, or partnering to conduct multi-national missions against shared threats like piracy or illegal, unreported, and unregulated (IUU) fishing. We have seen efforts like these grow over the past few years in the Indo-Pacific region with examples like the creation of a joint maritime training center with the Indonesian Coast Guard or U.S. Coast Guard patrols hosting ship-riders from Oceania nations to assist in protecting their Economic Exclusive Zones from IUU fishing. Sometimes building our partnerships even involves the transfer of resources to help build their capacity, which has occurred recently with

decommissioned U.S. Coast Guard cutters being sold and transferred to Vietnam. These types of opportunities and engagements by U.S. maritime forces will help strengthen our partnerships, build trust, create solutions to unique challenges, and garner shared commitments within the Indo-Pacific region. The growth of India's capability will provide similar opportunities and all of this helps promote professional interactions that prevent potential conflicts, help diffuse tensions, and avoid miscalculations and escalation.

Question 5: What strategic objectives do you think the next generation of leaders in the military should be thinking about?

CDR Bertsch: Predicting the future is tough and it's difficult to know what to focus on for the future but I think there are two general areas I would offer that provide some structure in looking out to what's next.

The first aspect I would assess is emerging technology. Clearly items like cyber warfare, cybersecurity, artificial intelligence, unmanned vehicles, autonomous machines, and data all fall into that category currently and are going to be instrumental in the coming future of the military over the next decade. Obviously it is important to assess these items and see how they are going to change the nature of military operations, weaponry, how we fight wars and the like, but even beyond that it is important to ask and address questions like: How will these change the requirements for personnel? What policy changes are needed to implement these technologies? What limits or constraints do these or should these technologies have? What are the ethical considerations for their use? These are the same types of issues that have been faced with other technological advancements like aircraft, bombs, and biological, chemical, and nuclear weapons. The current emerging technology and that of the future will face similar challenges and questions so it is important for leaders to be continually watching and learning about how technology is advancing, what it is capable of, and how it can be employed.

The second aspect of issues that I think senior leaders are always looking at and dealing with for future military generations is more about leadership and attempting to determine what issues need to be addressed to improve military service for the future force. Often this is based on societal changes and progress. In the current environment this involves rooting out and eliminating things like sexual harassment, sexual assault, discrimination, hazing, and the like, but also promoting inclusion, improving connectivity and communications, and offering alternative career paths and progression to service members. These issues and how they impact our workforce represent the strategic leadership objectives of the future just as issues like integration of communities based on race, gender, and sexual orientation as well as shifting from conscription through the draft to an all-volunteer force were a few of the past challenges. These strategic issues are constantly under assessment and focused on with an eye to improving our military organizations and addressing issues that impact service members. Senior leaders must constantly question how things can be improved through questions like: What are the needs of our personnel in the future? How do these social factors change interactions? How do these technologies impact our personnel and their lives? How can we have more equitable outcomes? Continually tackling these problems and looking forward to improve the lives and service of military members is an ongoing challenge for senior leadership, but a vital role for which they have been selected.

Treaties and Conflict: Effective Mechanisms for Compliance with Treaties Regulating Emerging Technologies

GABRIELLA C. BETTINO

Emerging technologies have exposed the limitations of existing laws and norms surrounding armed conflict. To understand how states modify their behavior in compliance with international law in these new contexts, we must first evaluate whether the established international legal structures can accommodate emerging military technologies. Some experts argue that the Laws of Armed Conflict (LOAC) need to be updated to include new dimensions of warfare, while others argue that they are flexible enough to encompass these emerging dynamics. In this piece, I propose that the latter view is correct; however, I argue that when new technologies emerge, new treaty regimes should be created. This will decrease the likelihood of specific uses of technologies, especially those with WMD-capabilities, that would violate established international law. Applying insights from the literature on arms control treaty compliance and verification, I argue that an effective treaty to govern emerging technologies with WMD-capabilities will include both a third-party verification body and mechanisms for these third parties to verify compliance with the treaty regime by looking at the cases of the Nuclear Non-Proliferation Treaty (NPT), the Military Technology Control Regime (MTCR), and the Biological Weapons Convention (BWC).

Literature Review

Recent technological advancement presents such unique changes to the battlefield that it has caused experts to question the effectiveness of current international law governing battlefield behavior. The group of scholars who argue that international law cannot effectiveness encompass these new dimensions of warfare does so on the basis that the international community needs to act proactively to effectively regulate conflict through the LOAC.[12] On the other side of the debate, experts also assert that the LOAC's flexible nature allows for its continued adaptability to changing conflict environments created by emerging technologies. Actors adapt their interpretations of the text of the LOAC over time and apply these changes to new conflict environments.[34] History is on the side of the second group of scholars as the LOAC have not substantively changed following the emergence of new technologies or domains. What

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1 Eric Talbot Jensen, "Future War, Future Law," Minnesota Journal of International Law 22, no.2 (Summer 2013): 282-323.
2 Bill Campbell, "The Dynamic Evolution of International Law – The Case for the More Purposeful Development of International Law," Victoria University of Wellington Law Review 49, no. 4 (2018): 561-572.
3 Elvira Rosert, Una Becker-Jacob, Giorgio Franceschini, and Annette Schaper. 2013. "Arms Control Norms and Technology." Chap. 4 in Norm Dynamics in Multilateral Arms Control, by Harald Mueller and Carmen Wunderlich, 109-139. University of Georgia Press.
4 Darren M. Stewart, "New Technology and the Law of Armed Conflict," International Law Studies 87 (2011): 271-299.

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has followed, however, is the creation of treaties and agreements regulating specific aspects of these emerging technologies.

Debates around the strength of enforcement have led to the well-established conclusion, through credible threat theory, that treaties containing strong enforcement mechanisms tend to have lower participation but higher levels of compliance. These strong mechanisms force states to weigh their commitments and preferences and only join intending to comply with treaty provisions.[56] As for self-enforcing treaties, the scholarship in this area has found that they tend to involve smaller numbers of parties, and they include third-party verification and enforcement procedures to ensure compliance.[7] That said, the verification and enforcement mechanisms must be well-designed to gain desired effects. For example, poor quality inspection systems produce violations of treaty provisions, as the loopholes in treaty text are more readily exploited.[8] Enforcement must also be designed in a manner to allow the penalty to accurately reflect the severity of the breach.[9] These penalties can and should range anywhere from presenting the non-compliant incident to a public forum to reporting the incident to a body such as the United Nations Security Council (UNSC) for further action.

Theory

Based on existing research, states need not create new guidelines for activity with emerging technologies where it relates to the LOAC. With other new domains created or explored in the past, such as space, information, or even air, the established LOAC never experienced explicit changes to their text. They were, however, changed regarding the ways their text was applied, reflecting changes to the international conflict environment.

The lack of explicit language within the Laws of Armed Conflict and other agreements surrounding conflict presents both pros and cons, with the flexibility of the text without precise wording commonly found in treaties, for example, posing both opportunities for adaptability and noncompliance. I argue, however, that the pros outweigh the cons in this instance. Specific technological treaty regimes tend to be the best solutions in the present international system. By creating agreements surrounding emerging behaviors through established routes to shift the interpretation of already codified laws and regulations, potential regulators will be able to circumvent challenges and, hopefully, create meaningful change regarding proper behavior with emerging technologies in an ever-shifting international conflict space. This leads to the hypothesis that is being tested in this piece:

H: *A strong treaty regime regulating emerging military technologies will include a third-party institution and that this institution's verification capabilities will ensure compliance.*

Research Design

In addressing the hypothesis posed above, this piece takes a "strong-medium-weak" case study approach. A "strong" case under this approach includes an international body and third-party verification mechanisms. A "medium" case includes either an international body or third-party verification mechanisms, but not both. Lastly, a "weak" case has neither of the above attributes. The goal with including the three levels of variation is to provide insights as to

5 Yvonne M. Dutton, "Explaining State Commitment to the International Criminal Court: Strong Enforcement Mechanisms as a Credible Threat," Washington University Global Studies Law Review 10, no. 3 (2011): 477-534.

6 Yvonne M. Dutton, "Commitment to International Human Rights Treaties: The Role of Enforcement Mechanisms," University of Pennsylvania Journal of International Law 34, no.1 (Fall 2012): 1-66.

7 Beth Simmons, "Treaty Compliance and Violation," Annual Review of Political Science 13 (15 June 2010): 273-296.

8 D.M. Kilgour, "The use of costless inspection in enforcement," Theor Decis 36 (1994): 207-232.

9 Louis B. Sohn, "Adjudication and Enforcement in Arms Control," Daedalus 89, no. 4 (Fall 1960): 879-891.

how variation on the independent variables, presence of an international body and third-party verification and enforcement mechanisms, affects the dependent variable, treaty/agreement compliance. This examines and tests the observable implications that these strong mechanisms induce state compliance with international agreements. Further study into the mechanisms of compliance within states is beyond the scope of this text.

The universe of cases for this study are all technological control agreements from 1675 (the Strasbourg Agreement) to 2017 (the Treaty on the Prohibition of Nuclear Weapons). After subsetting this list to include only multilateral and ratified agreements, the cases for this study were selected as follows: the strong case is the NPT, the medium case is the MTCR, and the weak case is the BWC. For the sake of brevity, the strong case will be discussed below.

Case Study - The Nuclear Non-Proliferation Treaty and the International Atomic Energy Agency

The NPT, International Atomic Energy Agency (IAEA), and related Safeguards Agreements provide the "strong" case for this study. As it has both an international body, the IAEA, and third-party verification through the Staff of Inspectors, it provides a "best case" for compliance under the theory proposed by this thesis from the universe of cases.

1. Verification Under the NPT and IAEA

The Staff of Inspectors of the Agency examine all operations conducted by the Agency to ensure that the Agency itself is complying with its safeguards. They also obtain and verify the accounts from the within-state inspections, reporting any instances of non-compliance to the Director-General, and then the Board of Governors.[10] This triggers a chain reaction where the state who is found in non-compliance will be called upon to remedy the situation, and the Board reports the incident to the UNSC and United Nations General Assembly (UNGA). [11]Upon failure to remedy under the initial notice, the Board has two avenues for action: they may suspend assistance and call for the return of any materials provided by the Agency or members of the IAEA, or they may suspend the member from its privileges and rights that it receives from membership.[12]

2. Compliance Assessment and the North-Korean Non-Compliance Case

Graph 1.

10 International Atomic Energy Agency, "The Statute of the IAEA," International Atomic Energy Agency, https://www.iaea.org/about/statute (Accessed 5 May 2021).
11 International Atomic Energy Agency.
12 International Atomic Energy Agency.

State	Non-Compliant Period
Romania	1992[13]
South Korea	2004[14]
Egypt	2004-2005[15]
Iraq	1991-2005[16]
North Korea	1992-Present[17]
Libya	The 1980s-2003[18]
Iran	2003-Present[19]
Syria	2008-Present[20]

Table 1.

As can be seen in the graph and table, nuclear non-compliance over time with the NPT and IAEA has been a relatively rare event, only occurring in the 1990s-early 200s and around 20 years following the enactment of the agreements. Of the 190 states parties to the treaty, eight countries have been found in non-compliance, producing a compliance rate of 95.8%.

The North Korean non-compliance case best shows the NPT and IAEA's ability to constrain the behavior of those who are looking to develop a military nuclear program. North Korea became a party to the NPT and its Safeguards Agreement in 1985,[21] where it fully participated until 1992,[22] when it denied IAEA inspectors access to waste sites in the country. The IAEA then requested that the UNSC authorize special ad hoc inspections in the country.[23] In March 1993,[24] North Korea then requested to withdraw from the treaty but instead suspended its membership in June 1993.[25] While its membership was suspended, it was still a party to the treaty, and the state did not make great gains in its military nuclear program until, in 2003,[26] it again requested to withdraw from the NPT, effective 10 April 2003. [27] Once the country was no longer party to the NPT and the associated Safeguards Agreement, its military nuclear program expanded.[28]

The North Korean case shows the power of not only the NPT, but also its associated body, the IAEA, and its mechanisms for verification and accountability. While North Korea was found to be in non-compliance with its Safeguards Agreement and the NPT, its military nuclear program was limited in scope compared to what it has grown to. Without the mechanisms for verification through the IAEA's Staff of Inspectors, the Agency, the UNSC would not have

13 John Carlson, "Defining Noncompliance: NPT Safeguards Agreements," Arms Control Association https://www.armscontrol.org/act/2009-05/iran-nuclear-briefs/defining-noncompliance-npt-safeguards-agreements (Accessed 5 May 2021).
14 NTI, "South Korea," NTI (Dec. 2015) https://www.nti.org/learn/countries/south-korea/ (Accessed 5 May 2021).
15 Carlson.
16 The White House, "Saddam Hussein's Defiance of United Nations Resolutions," The White House: George W. Bush https://georgewbush-whitehouse.archives.gov/infocus/iraq/decade/sect2.html (Accessed 5 May 2021).
17 NTI, "North Korea," NTI (Oct. 2018) https://www.nti.org/learn/countries/north-korea/nuclear/ (Accessed 5 May 2021).
18 NTI, "Libya", NTI (Jan. 2015) https://www.nti.org/learn/countries/libya/nuclear/ (Accessed 5 May 2021).
19 NTI, "Iran," NTI (Jun. 2020) https://www.nti.org/learn/countries/iran/nuclear/ (Accessed 5 May 2021).
20 NTI, "Syria," NTI (Apr. 2018) https://www.nti.org/learn/countries/syria/nuclear/ (Accessed 5 May 2021).
21 NTI, "North Korea."
22 NTI, "North Korea."
23 NTI, "North Korea."
24 NTI, "North Korea."
25 NTI, "North Korea."
26 NTI, "North Korea.
27 NTI, "North Korea."
28 NTI, "North Korea."

had the same information to hold North Korea accountable and in compliance, within limits. The expansion of North Korea's military nuclear program following its withdrawal further accentuates this point, as there needed to be a mechanism to hold the state back from creating the nuclear program we see today.

Conclusion

In conclusion, this piece has shown that not only will a new set of treaties be necessary to create a safer conflict environment concerning the use of emerging technologies in warfare, but also that these treaties must contain and international body and third-party verification mechanisms. The LOAC, being sufficiently malleable to adapt to changing environmental circumstances, need not be rewritten. While treaties are imperfect actions in the international law sphere as compliance issues plague any regime, they are effective tools where it comes to emerging technologies. They not only create best practices for use in conflict, such as the expectation to limit targeting of non-combatants, and for those that are wholly banned, they create incentive structures against their creation and use.

"A new set of treaties will be necessary to create a safer conflict environment concerning the use of emerging technologies in warfare,"

For future studies, it would be prudent to examine how these treaty regimes and international law as a whole affect decision-making to more directly test the causal mechanism in this piece to ensure that it does have the constraining effect at the individual/bureaucratic level. These is some literature in this area, with international environmental law providing more concrete examples of bureaucratic adaptation to treaty law, but examining decision-makers' thought processes and actions through archival studies could provide more insight into this mechanism.

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